TELEPHONE ENGINEER and MANAGEMENT

OCTOBER, 1948

HIO

Dates equal to the best that can be imported are grown in California's Coachella Valley. The center of this activity and the home of the world famous Date Festival is . . .

INDIO, CALIFORNIA

The progress that has been made in the date growing industry around Indio is tremendous. Experimentation at the turn of the century led to the importing of off-shoots from parent trees in 1904. Later, as these off-shoots became thriving trees, off-shoots were taken from them and expansion began. Today, nearly 6500 acres are under cultivation around Indio and the annual volume of the date growing industry here runs into several million dollars.

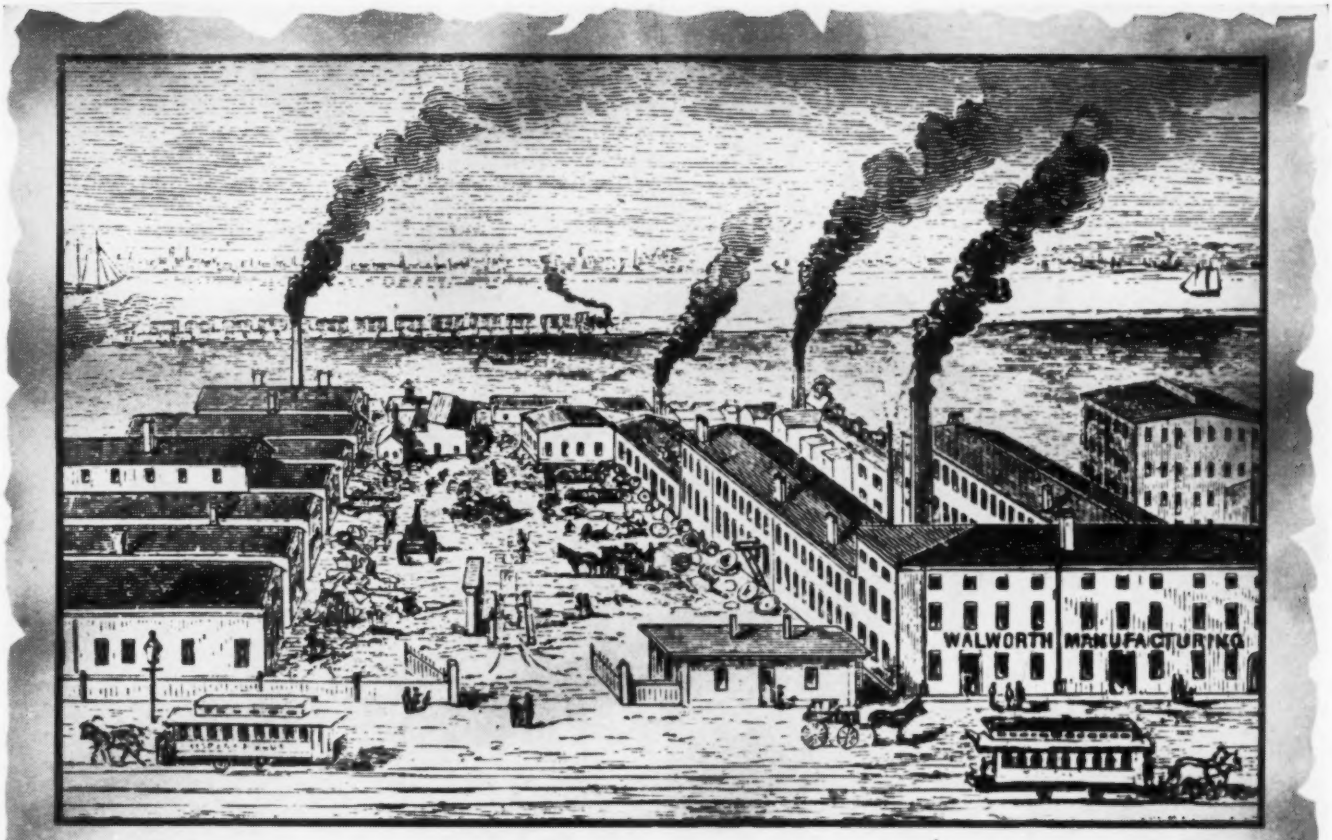
"Prove all things.
Hold to that which is good and true."
THESSALONIANS

The progressive expansion of the date growing industry in Indio might have been based on this sound bit of philosophy. Our expansion has definitely been guided by this thought. We now publish telephone directories for well over 1000 cities and towns, including Indio, California, which is served by the Coachella Valley Home Telephone & Telegraph Company. In the publishing of each of these directories we follow the "good and true" methods—the ones which we have found to be the most efficient in our years of experience. The net result is a more accurate, attractive directory—a harder working ambassador of good will for each telephone company we serve.

We should like to discuss your directory situation with you and submit a complete directory service plan to fit the needs of your company. Your inquiry will receive prompt attention. No obligation.

GENERAL TELEPHONE DIRECTORY COMPANY

Eastern Office:
185 North Wabash Avenue, Chicago 1, Illinois • Telephone State 5478
Western Office:
Press-Telegram Building, Long Beach 12, California • Telephone 6-7221



Plant of the Walworth Manufacturing Company in Cambridgeport, Mass., 1876. The telegraph wire used by Professor Bell for his first reciprocal conversation ended in the building in the right-hand foreground, the other end being in the company's office in Kilby Street, Boston.

72 YEARS AGO THIS MONTH

The first two-way talk over an outdoor wire took place

"On October 9, 1876," reported Thomas A. Watson, "we were ready to take the baby outdoors for the first time." Bell had received permission to use a private wire between Boston and Cambridge. After clearing away some initial trouble, "came Bell's 'ahoy, ahoy!' I ahoyed back, and the first long distance telephone conversation took place."

Tests on longer lines soon followed. Improvements in instruments were constantly being made. And within but a few years, telephone exchanges had been set up in nearly every state. Telephone progress was off to a flying start. The telephone tradition of faithfulness and dependability, established then, has been maintained through all the succeeding years.

In Exide Batteries you will find the same dependability for which telephone service is famous throughout the world. For more than half a century, Exide Batteries have been proving themselves worthy of that trust.

Exide®
BATTERIES

1888 . . . Dependable Batteries for 60 Years . . . 1948

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • *Exide Batteries of Canada, Limited, Toronto*

IT SEEMS TO US...

JAY G. MITCHELL, familiar to the telephone industry as a consulting engineer and author of several books and many features in the telephone journals, was in attendance at the USITA convention in Chicago. Jay has been busy of late in his consulting practice aiding Independents prepare increased rate applications and other economic operating and management studies.

• • •

Another camera enthusiast is WALTER LAWRENCE, sales engineer of the Automatic Electric Sales Corp., Chicago. Walt has now advanced to color photography both with his Leica and with movies. His summer trip through the west is in color movies and excels many travelogues we have seen.

• • •

TED TALMADGE, now a communications engineer with the TVA and well known to the old timers in Independent telephony, will be one of the speakers at the Midwest General Meeting of the American Institute of Electrical Engineers during their sojourn in Milwaukee, Schroeder Hotel, Oct. 18-22.

• • •

JOHN H. AGEE was honored October 8 with a dinner in his honor given by his associates of the Lincoln (Nebr..) Tel. & Tel. Co. Prominent telephone men from all parts of the country were in attendance to join the popular vice president and general manager of the Lincoln company, now retired, for the important occasion. Mr. Agee retired as chairman of the Employment Relations Committee of USITA after ten eventful years of work after making the Committee report to the convention just adjourned.

• • •

Congratulations to COL. ED LOVE, of Koiled Kords, on his exhibit showmanship during the national convention in Chicago. His unique presentation of their new products Telecord and Koiled Kord was an eye-opener and drew a record number of visitors to the exhibit room.

The National Telephone Magazine

TELEPHONE ENGINEER and MANAGEMENT

OCTOBER, 1948 **VOL. 52, NUMBER 10**

Editor, RAY W. SMITH • *Advertising Director*, ROY F. SMITH
Managing Editor, JOHN G. REYNOLDS • *Promotion Manager*, DON C. SORENSON
Washington Bureau, ROLAND C. DAVIES *and* FRED HENCK
Circulation Mgr., BERNADINE STEPHENS • *Production Mgr.*, MARGARET INDIA

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COVER: Discussion group in Plant Training class conducted by Chesapeake & Potomac Tel. Co. of Virginia gets answers to questions shown on board at right of discussion leader.

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American 4551 TELEPHONE BODY... for Rural Work

MAINTENANCE - INSTALLATION - GENERAL SERVICE

Two views of American 4551 designed specifically for rural work. Mounts on any make ½ ton chassis.

American Body 4551 has plenty of room for all materials needed in rural work . . . and makes them quickly accessible.

Full inside body width of 40" provides room for the bulky items. Then on each side, compartments house the variety inventory, such as wire, hand lines and sub sets. Padded adjustable trays carry desk stands, test, telephone and sub sets.

Side compartments enclose shelves with adjustable partitions for small hardware, space for tool bag and kit. Other partitions make space for wood pins, pole steps, pole brackets, rubber gloves, etc. Tail gate, when dropped, can be used as a loading shelf. Optional equipment, for most types of chassis, includes a drop tail gate and bumper combination.

Overhead ladder brackets extend over cab and accommodates a 24 ft. extension ladder and a 6 ft. stepladder.

The neat, well balanced 4551 body affords an abundance of space and gives you a rolling storeroom for installing rural house sets and equipment for maintaining lines.

Here's dimensional data. If you have other questions, we will be glad to hear from you:

GENERAL DIMENSIONS

Overall length	70 inches
Inside width	40 inches
Height at front	42 inches
Height at rear	38¼ inches
Width of Compartment	15 inches
Weight (approx.)	650 lbs.

THE *American* COACH & BODY COMPANY

9503 WOODLAND AVE., CLEVELAND 4, OHIO

SALES and ASSEMBLY THE AMERICAN COACH AND BODY CO., CALIF. DIV., 432 FIFTH ST., OAKLAND 7, CALIF.
BAKER EQUIPMENT ENGINEERING CO., SUMMIT & NORFOLK STS., RICHMOND 11, VA.

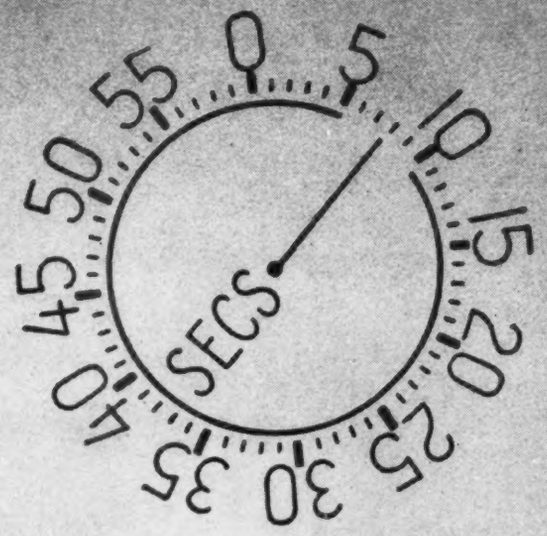
OFFICES 350 MADISON AVE., NEW YORK 17, N. Y. INSURANCE EXCHANGE BLDG., DES MOINES 9, IOWA

ACB and

Every second counts

WHEN

CALCULAGRAPH
figures toll time!



Every minute and every second of every toll message is accurately computed by CALCULAGRAPH. A permanent printed record is made of each message individually with no calculating or pencil work required of the operators at any time. Modest initial cost makes a CALCULAGRAPH a paying investment right from the start in any exchange—large or small.

CALCULAGRAPHS are made in several models and are adaptable for any type of switchboard installation. When busy spots develop at certain hours, CALCULAGRAPH pedestal portable mounting can be employed to speed message handling efficiently and accurately. Complete catalog information is available on request written on company letterhead.

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L. M. BERRY AND COMPANY

Telephone Directory Advertising Exclusively

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WHY PUT UP WITH THIS . . ?

WHEN YOU CAN HAVE THIS . . .

THE NEW

Koiled Kord

FOR ONLY **75¢**

Now you can give your customers the finest, longest lasting, most convenient telephone cord without extra cost to them.

3 CONDUCTOR TINSEL for flexibility and resistance to fatigue. **RUBBER INSULATION,** flexible but tough, to give uniformly high insulation resistance under all service conditions. **CABLED, THEN JACKETED WITH NEOPRENE** that is not affected by moisture, perspiration, light, oil, grease, acid and all sorts of abrasion, and will stand up under years of hard service without deterioration.

NO DANGLING NO TANGLING NO KINKING NO TRIPPING

Seven feet of high quality telephone cord koiled to a compact nine inch length that extends to more than four feet. Always retracts, never gets "baggy" or loose no matter how often it is stretched. The NEW Koiled Kord weighs less than 2¼ ounces with an O. D. of .195 inches and has a pull of only 1 pound when extended.

THE NEW KOILED KORD IS NOW AS INEXPENSIVE AS ORDINARY OLD FASHIONED TEXTILE CORDS

Priced to give you the finest, longest lasting, most economical cord on the market. Designed to give your customers the greatest convenience and service. Obviously you cannot afford to use anything but Koiled Kord products if you want long service, economy and convenience.

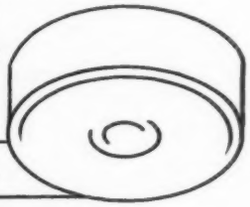
ACTUAL SIZE

Koiled Kords

INCORPORATED

NEW HAVEN 14, CONNNECTICUT

Koiled Kords available trimmed to fit all standard desk sets. Specify type when ordering thru your Independent Telephone Supplier.



EXTENDS TO MORE THAN FOUR FEET

NEWSLETTER
TELEPHONE ENGINEER

Fortnightly TELEPHONE ENGINEER ★ TELEPHONE ENGINEER AND *Management*

ON THE 1st OF EACH MONTH ON THE 15th OF EACH MONTH

NEWSLETTERS *on Alternate Weeks*

Dear Sir: October 15, 1948

51st Annual Convention of United States Independent Telephone Association held at Stevens Hotel, Chicago, Oct. 11-13, lived up to advance notices -- was "a humdinger" as we forecast in lead article of October FORTNIGHTLY TELEPHONE ENGINEER. Divisional conferences lead off convention activity Oct. 11, drew large audiences. General sessions on Tues. & Wed. featured address by USITA pres. Oscar Burton; Hon. Lester Hooker; Hon. Harry M. Miller; John H. Agee; Earl O. Shreve, pres., U. S. Chamber of Commerce; F. E. Norris, Herbert J. Schroll, & Dr. Kenneth McFarland. Running story of convention starts page 37 this issue of TELEPHONE ENGINEER AND MANAGEMENT. Majority of addresses also are abstracted & published in this issue; are well worth your careful readng.

To bring our convention report issue to you in shortest possible time after convention closed Oct. 13 required fastest possible production by our staff and printer. Our pictures & engravings had to be quickly processed. We held Oct. 15 issue for late news developments to bring you news while it is news.

* * *

Press-time rate adjustment developments showed applications on the increase over the country. In Illinois five companies -- Harrisonville Tel. Co., Herrick Limited Tel. Co., Keyesport Tel. Corp., Findlay Mutual Tel. Co., & Casey, Toledo & Neoga Tel. Co. filed applications for rate increase authorizations. A. C. Herbert, exec, v.p., Pennsylvania Independent Tel. Assn., reported rate adjustments authorizing $61,063 in revenue boosts had been approved for five companies -- Bethel & Mt. Aetna T. & T. Co., Meadville Tel. Co., West Branch Bell Tel. Co., Lycoming Tel. Co., Lakewood Rural Tel. Co. In North Dakota, commission found in case of Overland Tel. Co., Westfield, a condition, similar to plight many companies are in; in order approving rate adjustment for Overland Company, commission order said -- "Company had gross operating revenues of $4,012.31 in '47; operating expenses of $4,137.45; proposed rates are just and reasonable.

* * *

Supplies of lead, zinc & copper are lagging far behind demand, according to metal producers attending recent annual convention of American Mining Congress in San Francisco. Mine owners declared it will take two years, maybe more, for them to catch up with orders. This means, they added, that prices of these key metals probably will remain high.

* * *

"Signs Of The Times" found in recent announcement by Illinois Bell that its directors had declared quarterly dividend of $1.50 despite net earnings of only $1 a share for the third quarter. Illinois Bell pres., G. K. McCorkle stated, "Stockholders have not been getting anything like a fair return and investor funds are vital to support our continuing expansion and improvement program," in explaining why dividend was paid even though it was not fully earned in the quarter. He called the dividend

"subnormal" and said that because of the inflation forces working on the company's earnings it is doubtful that it can continue to pay $1.50 a quarter.

Before war, Illinois Bell regularly paid $2 a quarter, and experience showed that approximately that rate of return on stock was required to attract the continually needed investor capital for the growing telephone business.

Mr. McCorkle commented that, "The public is getting more and better telephone service. The employes have been getting better wages and working conditions. But the investors, who make all this possible, have been getting less and less. This inequity will have to be corrected sooner or later, if we are to continue to expand and improve telephone service to the public."

* * *

Mobile telephone service has been on the move since it first ventured onto American highways over two years ago. It has moved into nearly five thousand vehicles and into nearly 100 different cities and towns, demonstrating the versatility & the value of telephone service in fields where telephone communication was never before possible. At the end of its first year, mobile service carried 10,000 calls a week to and from 1,400 vehicles in 39 cities. By end of its second year, service had tripled in size and was still growing.

* * *

Cincinnati & Suburban Bell Tel. Co. announced Sept. 27 that it had filed application with Ohio Public Utilities Commission for its first increase in more than 22 years. New rates proposed would increase total revenue by about $2,835,000 a year, or slightly less than 17%. At the same time company said it will file similar request with Kentucky Public Service Commission for its subsidiary, Citizens Telephone Co., operating in Covington & eight other exchanges.

* * *

Highlights: D. F. Reedy Tel. Co. (N.Y.) requested authority to sell system to R. C. Mills....Recently organized Sheyenne Northwest Tel. Co., Sheyenne, N. D., will construct & operate rural system near Sheyenne....A. B. Quam purchased Shell Lake (Wis.) Tel. Co. from Mrs. Bessie A. Raas....Wood County Tel. Co., Wisconsin Rapids, Wis., announced plans for $170,450 expansion program....Danbury (Wis.) Tel. Co. purchased Siren (Wis.) Tel. Co....J. B. Avery. Sr., appointed member of Tennessee Railroad & Public Utilities Commission.

James A. Perry & Perry T. Knight elected members of Georgia Public Service Commission....John J. Moran appointed vice-pres. & gen. mgr., Southern Continental Tel. Co., Cookville, Tenn....New officers elected at recent convention of Tennessee Independent Tel. Assn., are: J. L. Dickens, president; T. D. Odle, Parsons, vice-pres.; Earle Blomeyer, Cookeville. Directors elected are: J. W. Wray, Tracy City; Mr. Dickens; W. S. Argabright, Kingsport; A. E. Reynolds, Bristol; J. N. Cox, Cookeville; H. W. Vaughn, Fayette, Ala.; L. C. Bryon, Rutledge; Mr. Odle, and J. J. Moran, Cookeville.

Ray W. Smith, Editor

SHERRON ACOUSTIC STAINLESS STEEL *and* TEXTOLITE PLASTIC TELEPHONE BOOTH

Judged Best In Its Class

First in its class! This distinction has been won by the new Sherron Telephone Booth in the 7th Modern Plastics Competition. On the strength of this recognition, we have named this booth THE CITATION. Its stainless steel construction and Textolite plastic panels make THE CITATION a winner on every count . . . a better looking booth of lifetime service, requiring a minimum of maintenance.

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GRAND CENTRAL PALACE • N.Y.C.
SEPT. 27 — OCT. 1, 1948

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RCA BLDG. • ROCKEFELLER CENTER, N. Y.
OCT. 1-29, 1948

U. S. INDEPENDENT TELEPHONE ASSOC.
HOTEL STEVENS • CHICAGO, ILLINOIS
OCT. 11, 12, 13, 1948

SHERRON METALLIC CORP.

1201 FLUSHING AVENUE • BROOKLYN 6, N.Y.

THE PROOF

GULF STATES TELEPHONE COMPANY

GENERAL OFFICES

OSCAR BURTON
VICE-PRESIDENT & GENERAL MANAGER

TYLER, TEXAS
August 30, 1948

Mr. Ray W. Smith, Editor
Telephone Engineer Magazines
7720 Sheridan Road
Chicago 26, Illinois

Dear Mr. Smith:

Congratulations on the fine Buyers' Directory and Composite Catalog you have published for the telephone companies.

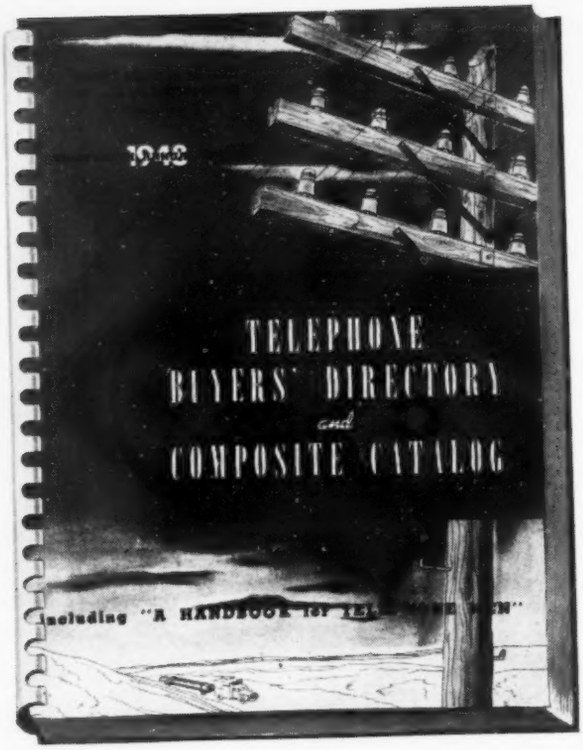
We probably experience the same problem in our office as other telephone companies who receive catalogs, price sheets, etc., from a number of manufacturers and suppliers; namely, we almost need an extra secretary to keep track of them but with this Directory and Catalog we have everything in one book. Further, after looking through your Buyers' Directory and Composite Catalog I find many manufacturers of items we need almost daily listed therein which should make it easy for us to quickly locate supplies.

If you have any extra copies available I would like to have six or seven to distribute among men of our plant and construction departments. They have a voice in the buying of many of our needs and to a man have demanded individual copies in order to have their own "Handbook for Telephone Men" handy for ready reference.

Looking forward to seeing you at the National Convention in Chicago, I am

Cordially yours,

Oscar Burton
General Manager



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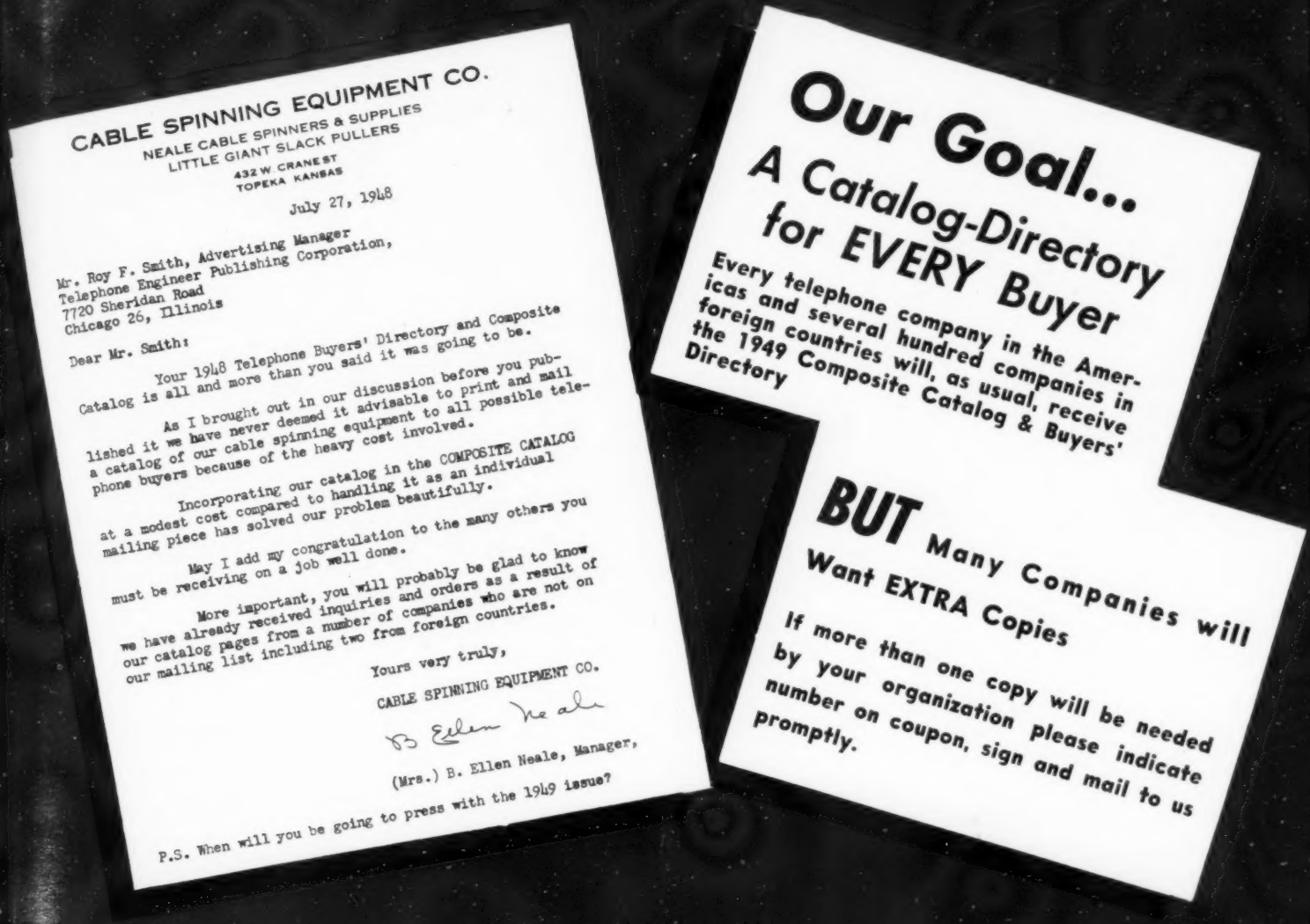

CABLE SPINNING EQUIPMENT CO.
NEALE CABLE SPINNERS & SUPPLIES
LITTLE GIANT SLACK PULLERS
432 W. CRANE ST
TOPEKA KANSAS

July 27, 1948

Mr. Roy F. Smith, Advertising Manager
Telephone Engineer Publishing Corporation,
7720 Sheridan Road
Chicago 26, Illinois

Dear Mr. Smith:

Your 1948 Telephone Buyers' Directory and Composite Catalog is all and more than you said it was going to be.

As I brought out in our discussion before you published it we have never deemed it advisable to print and mail a catalog of our cable spinning equipment to all possible telephone buyers because of the heavy cost involved.

Incorporating our catalog in the COMPOSITE CATALOG at a modest cost compared to handling it as an individual mailing piece has solved our problem beautifully.

May I add my congratulation to the many others you must be receiving on a job well done.

More important, you will probably be glad to know we have already received inquiries and orders as a result of our catalog pages from a number of companies who are not on our mailing list including two from foreign countries.

Yours very truly,

CABLE SPINNING EQUIPMENT CO.

B Ellen Neale

(Mrs.) B. Ellen Neale, Manager,

P.S. When will you be going to press with the 1949 issue?

Our Goal...
A Catalog-Directory for EVERY Buyer

Every telephone company in the Americas and several hundred companies in foreign countries will, as usual, receive the 1949 Composite Catalog & Buyers' Directory

BUT Many Companies will Want EXTRA Copies

If more than one copy will be needed by your organization please indicate number on coupon, sign and mail to us promptly.

to
TELEPHONE ENGINEER
Publishing Corporation
7720 Sheridan Road,
Chicago 26, Illinois

We will need ..... EXTRA copies (FREE) of the 1949 Telephone BUYERS' DIRECTORY & COMPOSITE CATALOG.

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Company

City or town **Street or Box No.** **City and State**

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Submarine and Armored

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BRIDLE WIRES
Rubber or Synthetic Insulated

GROUND WIRES
Rubber or Synthetic Insulated

INSIDE WIRES
Rubber or Synthetic Insulated

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Rubber or Synthetic Insulated

POTHEAD WIRE
Rubber or Synthetic Insulated

BARE LINE WIRE—Copper

LASHING WIRE—Copper

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TIE WIRES—Bare or Insulated

Fill all your communication wire and cable needs with one order. Specify General Cable and rely upon Automatic for deliveries at the earliest possible date. You get the best when you specify General Cable. You save time and money when you concentrate on one source of supply. For everything you need in communication wire and cable supplies—insist on General Cable. Check your requirements from the list and place your order today.

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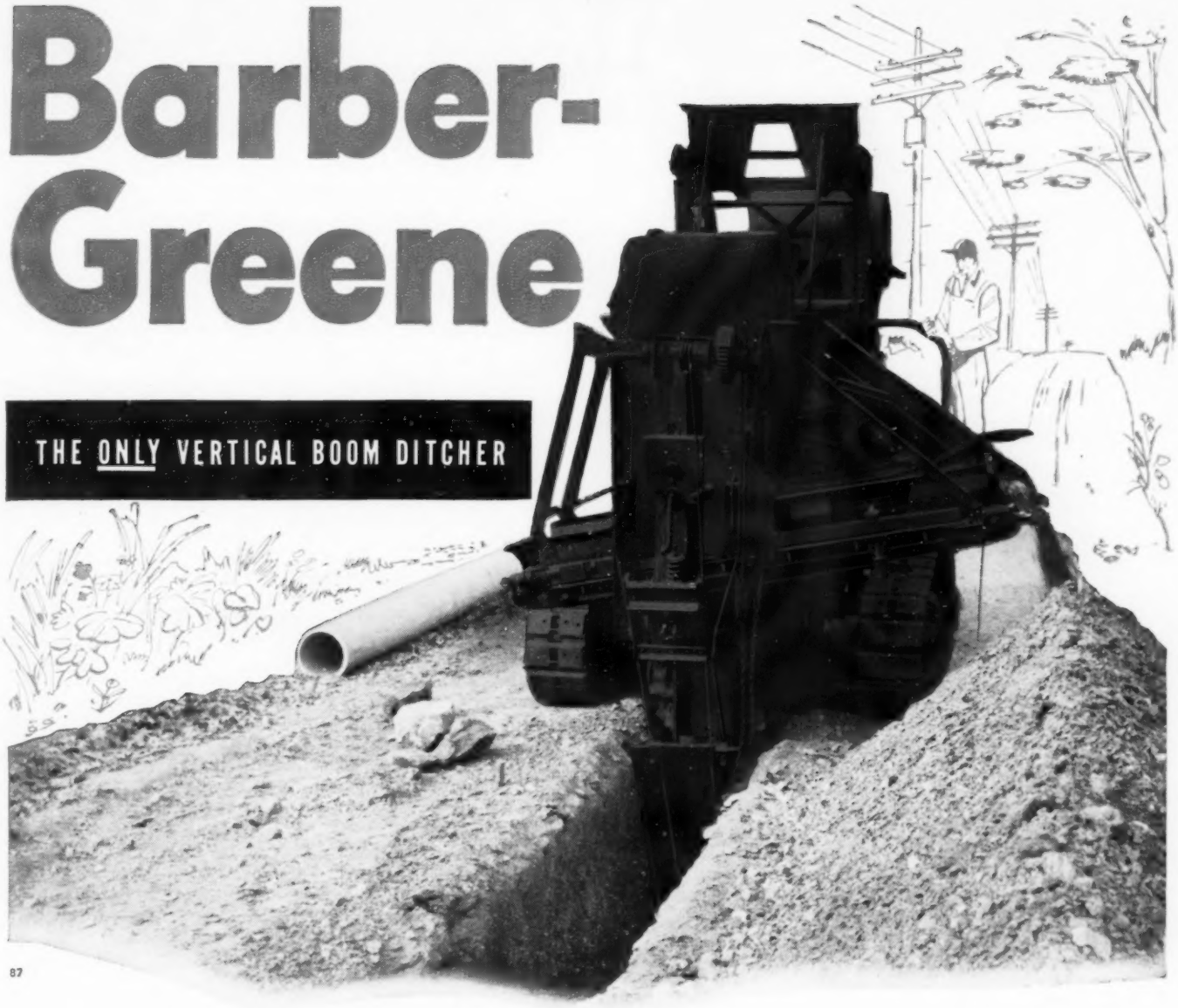


THE ONLY VERTICAL BOOM DITCHER

87

digs clean—leaves no ramp • discharges on either side

Here's an exclusive ditcher feature that saves a lot of hand labor. The Barber-Greene's vertical boom digs *straight down*, right up to walks, foundations, underground piping and mains, etc. *There's no ramp to run up digging costs.*

Closely spaced, self-cleaning "kick out" buckets, traveling at high rate of speed, cut like a milling machine . . . leave a clean-walled trench. It's this efficient operating principle that gets the B-G Ditcher through materials as tough as coral rock — down to 8 feet, 3 inches; widths up to 24 inches. Feeding speeds range from 10 inches to 8 feet per minute.

An adjustable spoils conveyor discharges on either side, and the automatic overload release protects both the machine and hidden objects.

Find out how this compact, maneuverable, easily controlled unit can keep your trenching costs down . . . and what varied work it will perform.

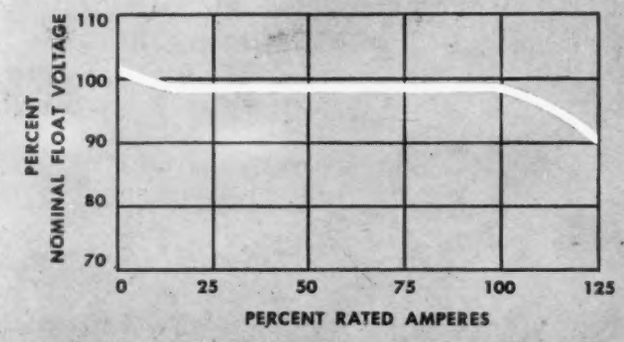
BARBER • GREENE COMPANY, AURORA, ILLINOIS

Constant flow Equipment

LOADERS PERMANENT CONVEYORS PORTABLE CONVEYORS COAL MACHINES BITUMINOUS PLANTS FINISHERS DITCHERS

BATTERY-CHARGER FUNDAMENTALS—

how constant voltage improves voice transmission



Typical Voltage Regulation Curve of the E. P. Diverter-Pole Motor-Generator

To assure satisfactory voice transmission, the Battery Charger must maintain the output voltage of the battery as close as possible to a constant value. Transmitters may become noisy if they are subjected to an excessively high voltage, and may have to be replaced because of permanent damage.

The E. P. Diverter-Pole Battery Charger maintains inherently constant d-c voltage . . . regardless of fluctuations in the a-c power supply. Delicate, separately-mounted regulating devices are not required. The E. P. Charger provides a safe, continuous floating charge to the battery. In addition, it is so designed electrically, and mechanically that user after user has gone on record that it is exceptionally quiet in operation and creates no objectionable electrical noise.

why EP motor-generators are best . . .

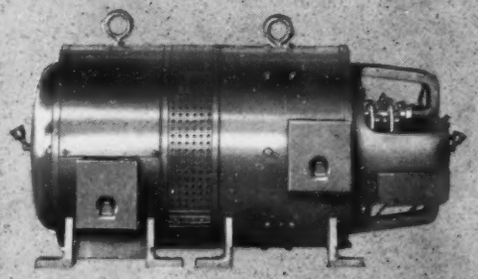
Since 1923, Diverter-Pole Motor-Generators have proved to be the most reliable, maintenance-free and efficient source of direct current for Telephone Exchanges. The characteristics of E. P. Diverter-Poles are ideal not only for the most satisfactory floating charge (a full floating charge is now the accepted standard), but also for carrying the major portion of the exchange load better than any other source of direct current.

The main reason for this superiority is that The Electric Products Company is a specialty manufacturer. For every exchange battery-charging application, E. P. designs and builds an individual Motor-Generator that fits exactly the requirements of the particular operation.

The result is Proved Performance as evidenced by the unequalled long-life records established by Diverter-Poles throughout the Telephone Industry.

For complete details . . .

ASK FOR BULLETIN 209



E. P. DIVERTER-POLE BATTERY CHARGERS

- Are completely automatic
- Control exchange voltage well within high-low limits at all times
- Lengthen battery life
- Are self-protecting against dangerous overloads
- Will not "run away" or reverse polarity

EP X-30

THE ELECTRIC PRODUCTS COMPANY

1729 CLARKSTONE ROAD CLEVELAND 12, OHIO

QUALITY ELECTRICAL PRODUCTS
PHILLIPS
CANADA since 1889

The International AUTOMATIC ELECTRIC Group

ATE

AUTELCO MEDITERRANEA S.A.T.A.P.

AE CO

..... Pattern for WORLD-WIDE SERVICE

The union of four outstanding telephone manufacturing companies under the banner of International AUTOMATIC ELECTRIC Corporation weaves a pattern of world-wide service that is second to none. From this well-knit organization come products of finest quality—telephone exchange equipment, telephone instruments, and telephone wires and cables that are supplied through the International AUTOMATIC ELECTRIC Group to telephone organizations everywhere.

We are also affiliated, in our Group, with telephone companies operating in seventeen of the United States—also in Canada and elsewhere. The experience of these operating companies can thus be brought to bear upon the engineering and installation of telephone plants of any size in any part of the world. The International AUTOMATIC ELECTRIC Group is prepared also to finance such plants if and as desired by any customer.

We are glad to adapt our service to your specific needs. Simply tell us how we can serve you.

International AUTOMATIC ELECTRIC Corporation

1027 WEST VAN BUREN STREET, CHICAGO 7, U.S.A.

AUTOMATIC ELECTRIC SALES COMPANY, S. A.
22 Rue du Verger Antwerp, Belgium

Export Distributors For:
AUTOMATIC ELECTRIC COMPANY, Chicago, U. S. A.
PHILLIPS ELECTRICAL WORKS LIMITED, Brockville, Canada
AUTOMATIQUE ELECTRIQUE, S. A., Antwerp, Belgium
AUTELCO MEDITERRANEA, S. A. T. A. P., Milan, Italy
and other manufacturers
Selling Companies and Agents Throughout the World

Perfect Pair—

These KELLOGG Cordless PBX Features Insure Better Subscriber Service

- Operates with either common battery manual, dial or magneto main exchanges.
- Through battery feed on trunks.
- Through or attendant dialing.
- Balanced battery feed.
- Trunk Holding.
- Low current consumption.
- Positive Supervision.
- Night Connections.
- Through trunk supervision.

KELLOGG CORDLESS PBX and *Any* SUBSCRIBER WHO NEEDS PRIVATE BRANCH EXCHANGE SERVICE!

It's the ONLY Cordless PBX You Can Use With—

DIAL MAIN EXCHANGE

COMMON BATTERY MAIN EXCHANGE

MAGNETO MAIN EXCHANGE

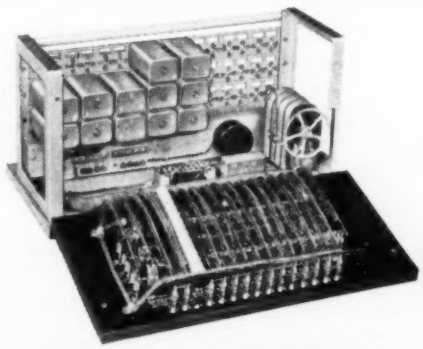
—without Circuit Modification or Re-Wiring!

Here's the ideal board for providing PBX service to small companies who need extra facilities. Builds business by extending your service. Speeds installation, because you can put it in any exchange area without complicated wiring.

Subscribers like the operating ease of the Kellogg Cordless PBX. There are no bothersome cords or plugs. This allows making any connection at the flick of a switch; assures smooth, rapid, service.

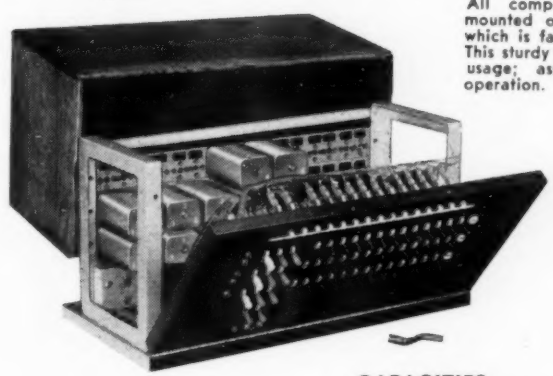
This smart-looking PBX suits any surroundings. Hinged panel and quickly-removable cabinet permit fast, easy maintenance. The fine, dull-finished wood cabinet is reinforced with a steel frame to insure long life under hard use. Oak is standard, but any wood or finish can be furnished.

See how little it costs to put this business-booster to work for *you*. Contact Kellogg for full information *today!*



EASY ACCESSIBILITY

Front panel is hinged at bottom, which permits dropping forward to expose all wiring and components for quick inspection and maintenance. Cabinet lifts off in one piece, for convenience.



RUGGED CONSTRUCTION

All components and wiring are mounted on a steel frame chassis, which is fastened to the baseboard. This sturdy construction endures hard usage; assures long, trouble-free operation.

CAPACITIES

		Wire	Equipped
Model 1007-CC	Lines (Less Relays)	12	10 or 12
	Trunks to Main Exchange	3	2 or 3
	Connecting Circuits	5	3
	Cabinet Finish	Oak or Walnut	
Model 1007-CCX	Lines (With Relays)	12	12
	Trunks to Main Exchange	5	5
	Connecting Circuits	5	5
	Cabinet Finish	Walnut (Oak on Special Order)	
Model 2007-11	Lines (Less Relays)	20	15
	Trunks to Main Exchange	5	3
	Connecting Circuits	5	5
	Cabinet Finish	Oak or Walnut	

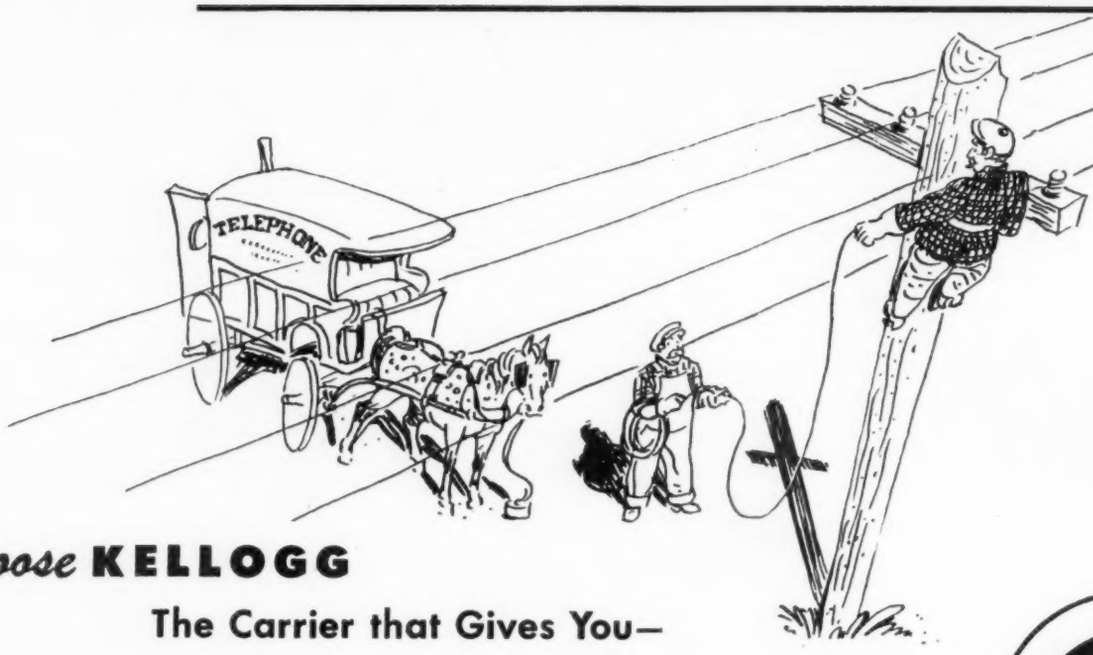
Every Kellogg Cordless PBX Switchboard is equipped with a Kellogg Masterphone operator's handset as pictured. These instruments are equipped with either a dial or a dial blank.

KELLOGG Cordless PBX Switchboards

KELLOGG SWITCHBOARD AND SUPPLY COMPANY

6650 So. Cicero Avenue, Chicago 38, Illinois

In "99" it was "add-a-line". . .



Choose **KELLOGG**

The Carrier that Gives You—

MORE d

See the Comparison!

- ★ **Kellogg 5A-J Carrier Systems give you 30 db of operation at a nominal cost per db.**
- ★ **"X" Carrier System provides only 16 db of operation at an *increase* of approximately 70% per db.**
- ★ **"Y" Carrier System provides only 12 db of operation at an *increase* of over 100% per db.**

IMPROVES TRANSMISSION

Builds subscriber usage and satisfaction by making it a pleasure to call "long-distance". Eliminates powerline hum so frequently present on wire circuits.

EASY TO INSTALL AND OPERATE

Mounts on 19″ equipment rack, needs no oscillator synchronization, no frequency adjustments in the field. All adjustments except voice and carrier output-level are pre-set at the Kellogg factory.

SIMPLE TO MAINTAIN

Occasional replacement of a vacuum tube is practically the only maintenance this carrier ever needs!

FLEXIBLE IN DESIGN

Conversion from ring-down trunk to dial trunk via the carrier channel requires only a substitution of the signal units. Adding a second carrier channel requires only a few simple external connections.

SOUND CONSTRUCTION

Rugged, telephone-type components and advanced circuit design assure long, trouble-free operation.

ADAPTS TO ANY EXCHANGE

Can be used with manual or dial central office equipment to provide an additional ring-down or dial trunk or rural line.

. . . NOW, Operating Companies are Expanding Toll Facilities with Telephone CARRIER!

Single channel carrier systems double your toll facilities and revenue, by permitting two conversations to be transmitted simultaneously over a two-wire metallic circuit. Need *no extra lines*, heavier poles or added maintenance. Think it over! With today's construction costs ranging as high as $250 per mile, it pays to install a carier system if as little as 8 miles of new line is needed. Contact Kellogg *today* for complete information!

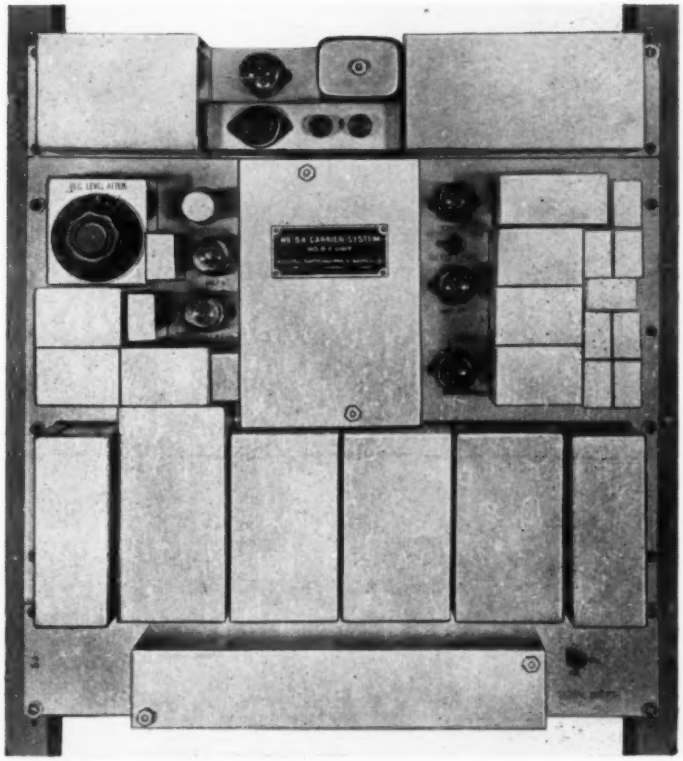
10 PER DOLLAR!

A Carrier System of Every Need!

5A-J: Provides an additional ring-down trunk in which ring-down is accomplished over carrier channel. Can also provide an additional circuit for magneto, code ring, multi-party rural service.

5A-CX: Provides only the talking circuit. Signalling is accomplished over any metallic circuit, such as a composite or simplex leg.

5A-K: Provides additional dial trunk in which composite-type dial and supervisory signals are transmitted over carrier channel. Terminals connect to composite dial trunks which bring out the T, R, A, B, E, and M leads, without special trunk adapters or applique circuits.



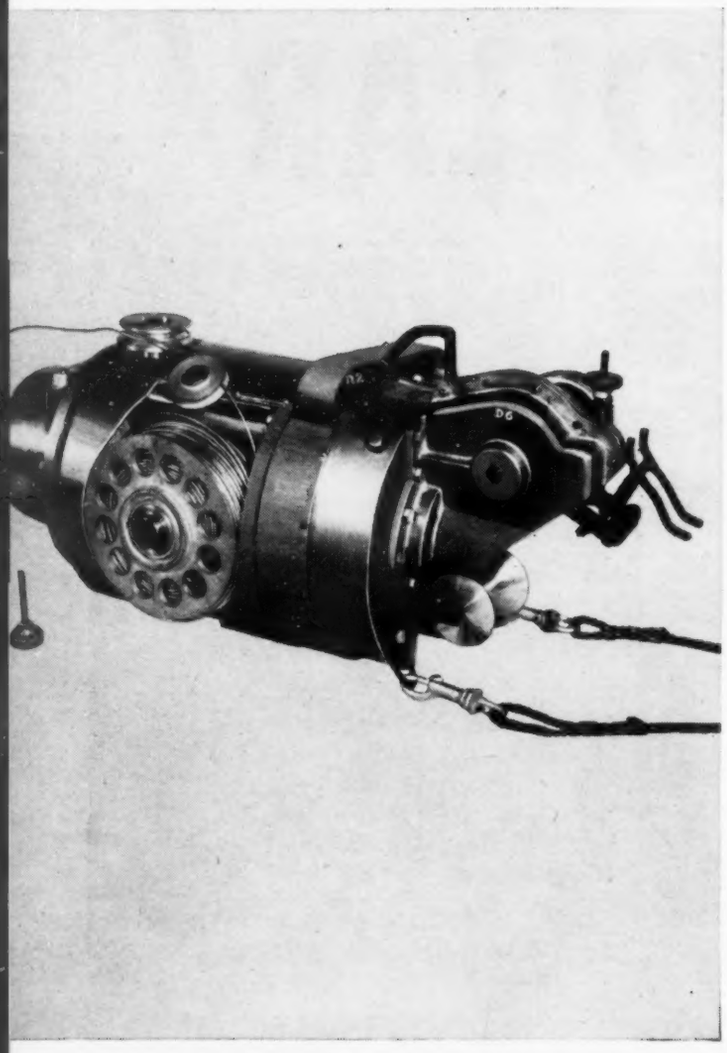
KELLOGG CARRIER

KELLOGG SWITCHBOARD AND SUPPLY COMPANY
6650 So. Cicero Avenue, Chicago 38, Illinois

The Satisfaction Lasts When You Buy Products

Recommended and Guaranteed by **KELLOGG**

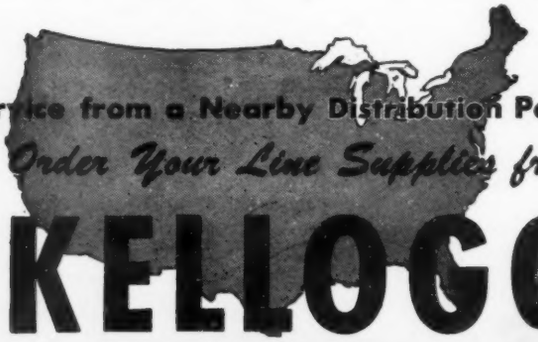
Here's the way to solve your Battery Problems! When you use Gould Planté and Floté Batteries exclusively, you're sure to free yourself of maintenance and replacement headaches and cut charging costs. These famous, long-life batteries, made by GOULD STORAGE BATTERY CORP., are designed to meet telephone needs. Write today for details!



Lower Costs on New Construction! The Model "D" Neale Cable Spinner, made by the CABLE SPINNING EQUIPMENT COMPANY, operates smoothly under all conditions. Double-drive mechanism insures evenly-spaced spirals spun under steady tension. Ratchet lock holds the spinner in place on strand whenever pull on tow line is released.

There's three-way satisfaction when you concentrate purchases of line supply and construction materials at a single, responsible source: (1) The *quality* is right—all products are backed by the famous Kellogg DOUBLE GUARANTEE; (2) The service is right—orders are intelligently handled by experienced people; (3) *Delivery* is right—orders are shipped from the nearest of over 100 strategically located distribution points.

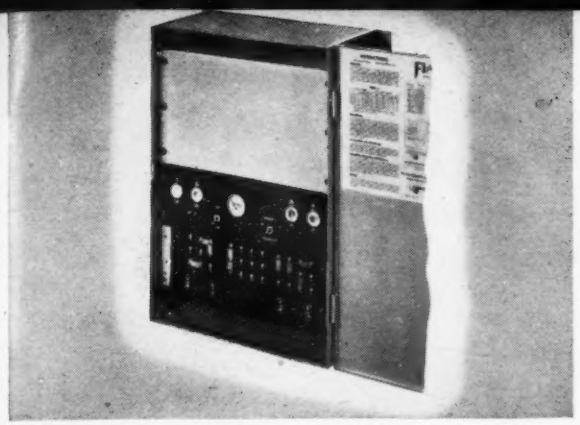
KELLOGG SWITCHBOARD & SUPPLY COMPANY
Branch Offices: Kansas City, San Francisco, St. Paul, Los Angeles
Factory and General Offices: 6650 S. Cicero Avenue, Chicago 38



For Service from a Nearby Distribution Point

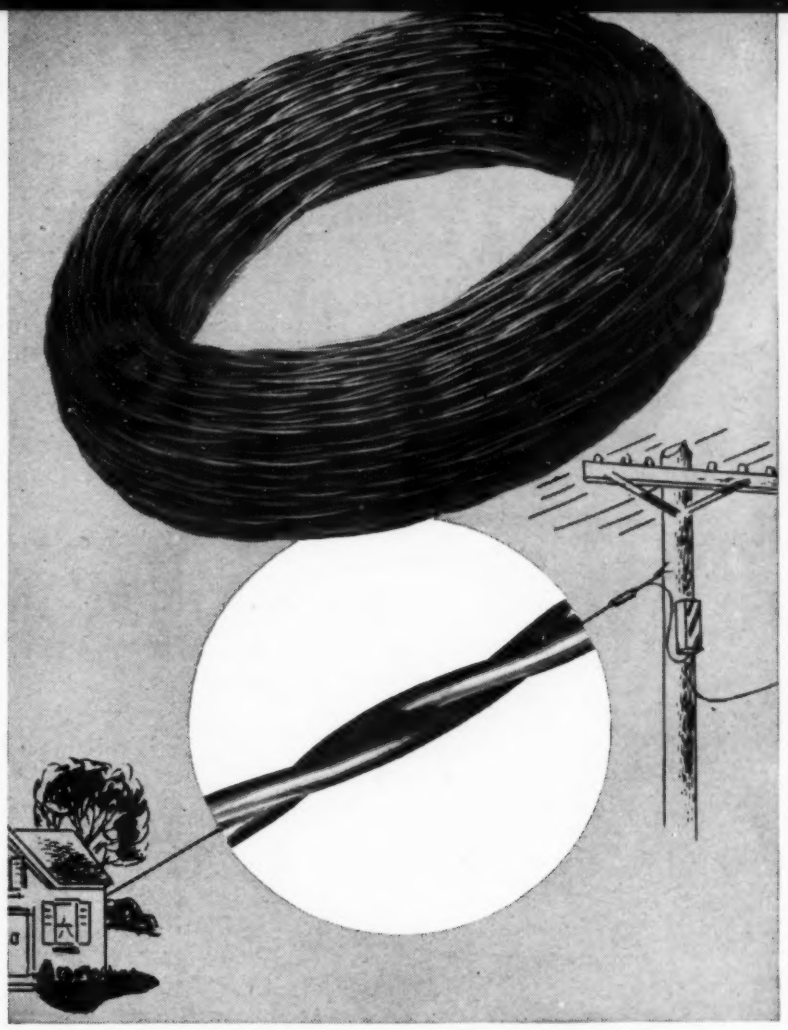
Order Your Line Supplies from

KELLOGG



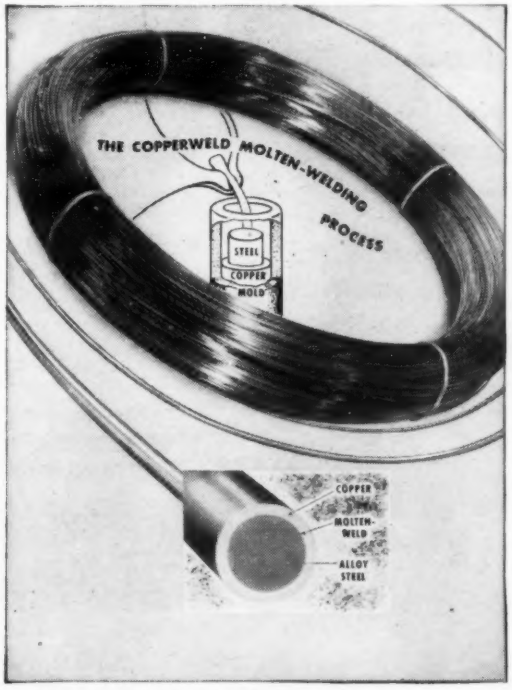
No Moving Parts to Wear! The Flotrol automatic battery charger consists of a phase-splitting transformer and a dry-disc rectifier. Gives trickle charge at constant voltage, compensates for input load-changes. Write to LORAIN PRODUCTS CORP., Lorain, Ohio, for Bulletin No. 137.

Entirely New—The low-cost Testerm Drop Wire Connector eliminates high-resistance joints when connecting subscriber drops to open wire. Mounts on cross-arm, provides an easy-to-test, dry-spot connection. Completely weatherproof. Write COOK ELECTRIC COMPANY, Chicago, Ill., *now!*

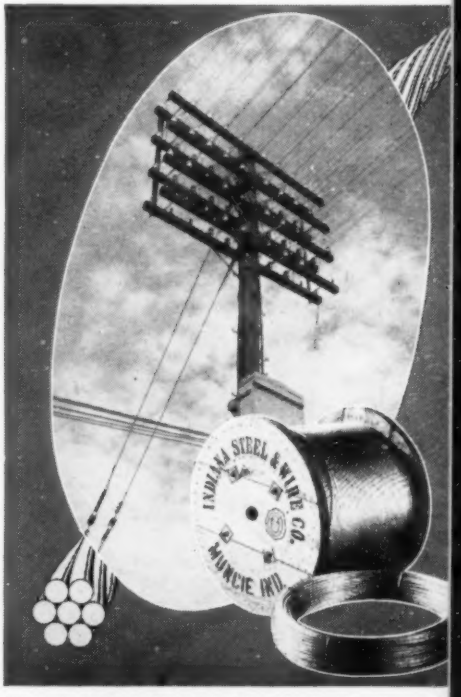


Drop Wire Lasts 30% Longer! GENERAL INSULATED WIRE WORKS Bronze Drop Wire lasts longer because it's drawn of solid, non-corrosive, high-conductivity bronze and covered with Neoprene—the tough insulation that stands hardest use. This wire is easier to handle, too, for it combines high tensile strength with great flexibility.

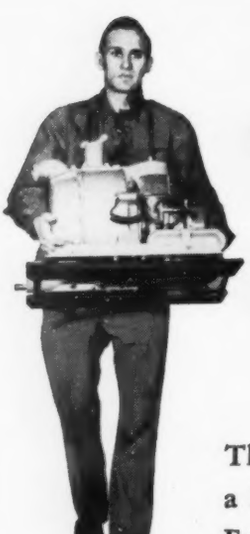
Dependable—in Any Weather! You can count on Hemingray Insulators to withstand the severest weather! They defy rain, snow and sleet. Made by AMERICAN STRUCTURAL PRODUCTS CO., many of these insulators are still serving after fifty years of hard use.



Lines that Last; yet Cost You Less! Copperweld line wire, made by COPPERWELD STEEL CO.'S Molten-Welding Process has the strength of steel plus the conductivity and rust-resistance of copper. Ideal for long-span work; safe under heavy wind and ice-loading.

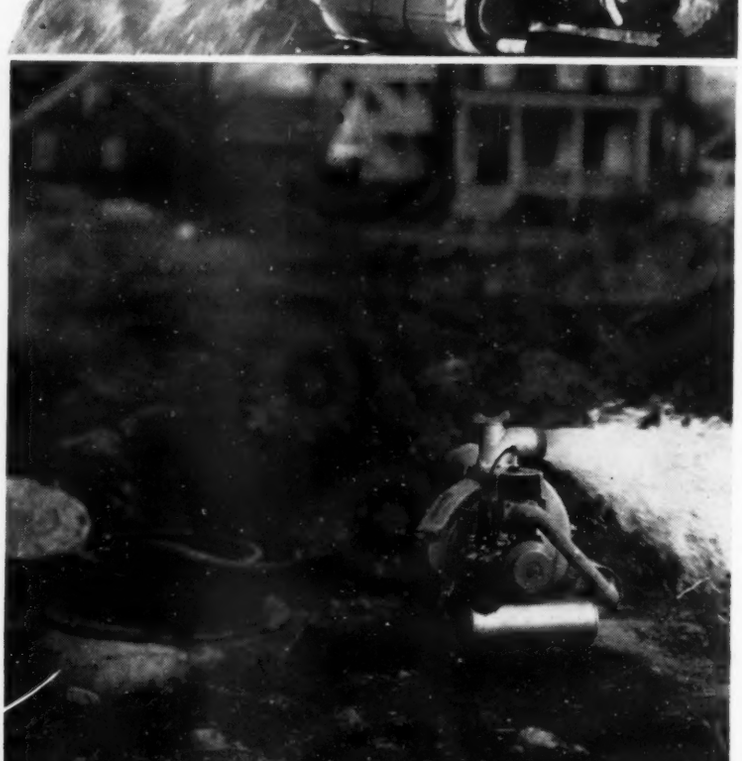


The Time-Tested Steel Strand. A ductile, adherent zinc coating applied by the famous Crapo Galvanizing Process, provides lasting protection against corrosion in INDIANA STEEL & WIRE CO. Crapo Steel Strand. Its rugged strength minimizes maintenance expenses.



The One Carryable Pump for all jobs

There's one thing about a Homelite Gasoline-Engine-Driven Pump... it's small enough to get to a job and big enough to *do* the job. But that's not all... not by far. A Homelite ... *and only a Homelite* ... has 9 Big Features that make it the best pump for all jobs ... your jobs.



The Best Pump for All Jobs is the Pump with All These Features		
1	CARRYABILITY	√
2	FAST SELF-PRIMING	√
3	AUTOMATIC SEEPAGE CONTROL	√
4	HIGH 28-FOOT SUCTION LIFT	√
5	NON-CLOGGING DESIGN	√
6	MAINTAINED RATED CAPACITY	√
7	DISCHARGE PRESSURE	√
8	DEPENDABILITY	√
9	SIMPLE DESIGN AND OPERATION	√

For Pumping Out Manholes

A Homelite has *fast* priming ... prevents delays. It is guaranteed for 28-foot suction lifts ... good for deep manholes. And it handles seepage quickly to maintain dry footing for workmen.

See for yourself

Write today for our new illustrated bulletin No. L-503 that tells the *complete* story and shows how you can get faster, better pumping with Homelite *Carryable* Pumps.

HOMELITE
CORPORATION
1210 RIVERDALE AVENUE, FORT CHESTER, NEW YORK

MANUFACTURERS OF HOMELITE *CARRYABLE* PUMPS · GENERATORS · BLOWERS · CHAIN SAWS

Above: the S. S. Harvester at docks of International Harvester's Chicago Steel Mill.

Quality BUILDS *Quality*

THAT'S THE INTERNATIONAL WAY

from raw materials to finished trucks

International Truck quality begins long before truck building starts. It begins with control of the raw materials that produce rugged truck strength and power.

Quality Builds Quality! That rule governs the selection and approval of every material and part used in every International Truck. Here's one example:

■ International Harvester's own ships bring iron ore from Minnesota's Mesabe Range down the lakes.

■ These ships also transport coal from International Harvester's mines in Kentucky. The coal is loaded at the lake port of Sandusky, Ohio.

■ Ore and coal are brought to International Harvester's steel mill in Chicago, where *Quality* steel, including one of a special type developed by International Harvester's technicians, is made to rigid specifications for International Trucks and International Engines.

Yes, *Quality Builds Quality.* Note with what success:

For 16 years more new heavy-duty International Trucks have been bought by American commerce and industry than any other make.

Motor Truck Division
INTERNATIONAL HARVESTER COMPANY · Chicago

Tune in James Melton on "Harvest of Stars." CBS Wednesday Evenings.

THIS EMBLEM IDENTIFIES GREAT TRUCKS
INTERNATIONAL

INTERNATIONAL *Trucks*

REACH OUT for this EXTRA REVENUE with

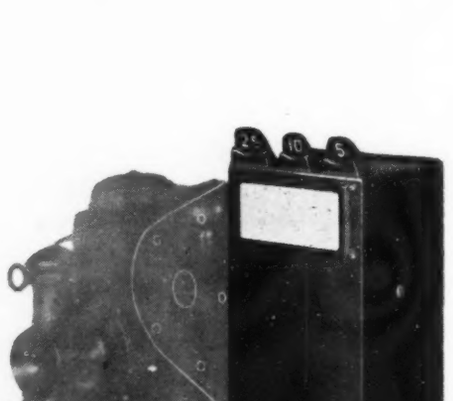
AUTELCO - GRAY PAYSTATIONS

(ATTACHMENT TYPE)

Find out for yourself how paystations will pay—for YOU. Install these "attachment-type" paystations with telephone instruments you already have. They require no special equipment at the central office. Their only cost is the cost of the paystations themselves—soon absorbed by extra cash earnings.

Paystations give you no billing problems, no uncertainty about accounts receivable. Paystation earnings represent immediate extra cash. Order Type 11 or Type 23-J paystations or let us tell you about other types to suit your needs.

Type 23-J post-pay shelf-mounting paystation has cradle hook and wiring for connecting modern handset, thus providing a paystation unit which may be used with any standard ringer box containing induction coil, condensers and other essential components.



Type 11 paystation for wall-mounting telephone. Designed for use with central battery automatic or manual wall set of the hand receiver type. The unit has a metal mounting plate which extends behind the instrument and conducts the coin signals to the transmitter.

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems

Makers of Telephone, Signaling and Communication Apparatus . . Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions

AUTOMATIC ELECTRIC SALES CORPORATION, 1033 W. Van Buren St., Chicago 7, U. S. A.

Export Distributors: INTERNATIONAL AUTOMATIC ELECTRIC CORPORATION

AUTHORIZED AGENTS FOR AUTELCO-GRAY PAYSTATIONS

Automatic Electric Sales Corporation . . . Graybar Electric Company . . . Kellogg Switchboard & Supply Company . . . Leich Sales Corporation . . . The North Electric Mfg. Company . . . Stromberg-Carlson Company.

EITHER WAY

RAYTHEON SOLVES YOUR POWER SUPPLY PROBLEMS

With Batteries

COVER REMOVED

The RECTICHARGER

- Completely automatic self-regulating battery charger with no moving parts.
- Automatically follows the load.
- Maintains constant ($\pm 1\%$) D.C. voltage output recommended for most efficient operation of equipment.
- Compensates for wide ($\pm 15\%$) changes in input voltage.
- Prolongs battery life by preventing over and under charging.
- Self-protecting on overloads.

Without Batteries

The RECTIFILTER

- Eliminates batteries and expense of battery service at selected locations.
- Provides filtered noise-free D.C. output.
- Minimum power costs achieved through high efficiency.
- Automatically compensates for load changes.
- No moving parts—entirely automatic.
- Change of power source in case of A.C. failure optional feature.

Your regular supplier of telephone equipment has models available to suit your needs and conditions. Call him today for complete information.

RAYTHEON MANUFACTURING COMPANY

WALTHAM 54, MASSACHUSETTS • *WALTHAM 5-5860*

Industrial and Commercial Electronic Equipment, Broadcast Equipment, Tubes and Accessories

RAYTHEON

Excellence in Electronics

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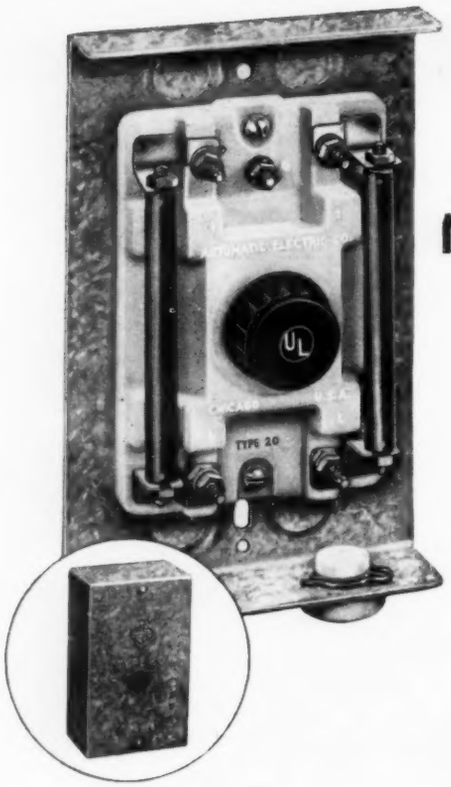

Get Complete Protection *with* AUTOMATIC ELECTRIC'S

New Type 20 Substation Protector

(Listed by Underwriters' Laboratories)

This new Automatic Electric Type 20 Substation Protector provides complete protection against every type of danger potential. Its carbon-to-carbon discharge surfaces, very accurately spaced, provide full and permanent protection at all times. The one-piece heavy porcelain base assures ample spacing between terminals, and between discharge blocks and fuses and terminals. Geometric centering of discharge blocks provides greater mechanical strength and greater effective dielectric strength. The removable hot-dip galvanized cover has ¾" clearance—a further safeguard against high potentials.

Cat. No. SB-91—With cover, for outdoor use—7 amp. fiber fuses.
Cat. No. SB-88—Without cover, for indoor use—7 amp. fiber fuses.
Other fuses available to order.

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems
Makers of Telephone, Signaling and Communication Apparatus . . Electrical Engineers, Designers and Consultants

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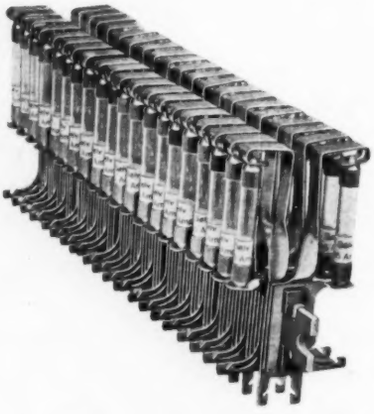


Protector Strip T.F. A. No. 5978

New protector strip developed by Telefon Automatic Fabrik A/S for use on main distribution frames (MDF). Modern, simple and compact design. Construction is based on T.F.A.'s patented method of mounting spring assemblies **without screws.**

Protector strips may be made for any number of fuses. The number, however, must be dividable by 4.

Dimensions of strip for 40 fuses: 8¼ x 3⅝ 1¾ inches.

For Complete Information Write

TELEFON FABRIK AUTOMATIC A/S
Amaliegade 7, Copenhagen

FOR FLEXIBILITY AND LONG LIFE IN

TELEPHONE CORDS

Use Commercial

Only top grade materials go into Commercial Telephone Cords. They are fabricated by expert craftsmen. Extra precautions are taken to insure flexibility and protection against moisture. And in service they prove the resulting superiority.

So no wonder more and more telephone companies are standardizing on Commercial Cords. Try Commercial next time you order and you will too. Prompt delivery on all standard types, or any special type you may require. Remember . . . Commercial means

ECONOMY • QUALITY • SERVICE

Commercial Cord
AND SUPPLY COMPANY, INC.

26 East Main, Clifton Springs, N. Y.

★Order by Code Number or Submit Sample

Get Ready for Severe Winter Weather NOW!

Check Your Stock of Pole Line Hardware Today!

Check List of STANDARD ITEMS

Galvanized Steel Strand
Hemingray Glass Insulators
Porcelain Telephone Knobs
Strain Insulators
Unglazed Porcelain Tubes
Angle Screw Fixtures
Insulated Screw Eyes
Type P Drop Wire Clamps
W. E. Type Drive Rings
Expanding Anchors
Kearney Drop Wire Grips
Galvanized Bridle Rings
Galvanized House Hooks
C. R. Service Connectors
Expanding Anchors
House Brackets
Pole Brackets
Corner Brackets
Drive Hooks
Guy Clamps
Suspension Clamps
Transposition Brackets
Locust Wood Pins
Pike Poles
W. U. Steel Pins
Oak Brackets
Fir Cross Arms
Machine Bolts
Carriage Bolts
Double Arming Bolts
Angle Bolts
Square Washers
Round Washers
Curved Washers
Crossarm Braces
Ground Rods
Anchor Rods
Pole Steps
Fork Bolts
Thimbleye Nuts
Supports for Wood Brackets
Nicopress Sleeves
Gray Label Telephone Batteries
Stewart Test Sets
Galvanized Iron Wire

-- SPECIALS! --

HANDSET MAGNETO WALL TELEPHONES

"LIKE NEW" in small oak cabinet with battery compartment: Alnico generator, anti-sidetone coil, condenser and late handset.

1600 ohm $22.00
2500 ohm 22.50

Guaranteed satisfactory . . . Prompt shipment

"LIKE NEW" DESK STANDS

W. E. No. 1020 with new mouthpiece and cords, transmitter and receiver $6.00
Kellogg equipped as above 5.00
Guaranteed to give satisfaction

SMALL RINGER BOXES

"LIKE NEW" Magneto Ringer Box with powerful Alnico Generator, Induction Coil and Concealed Ringer.

1600 ohm $13.20
2500 ohm 13.70

DROP WIRE

No. 17 Bronze, twisted pair. Standard stock in random coils of 200 ft. or more.

Neoprene jacketed ..... $22.00 per 1,000 ft.
Weatherproof braid ..... 20.67 per 1,000 ft.

Special Attention Given to Rush Orders

In addition to NEW and LIKE NEW telephone equipment— We take pride in quick delivery of supplies

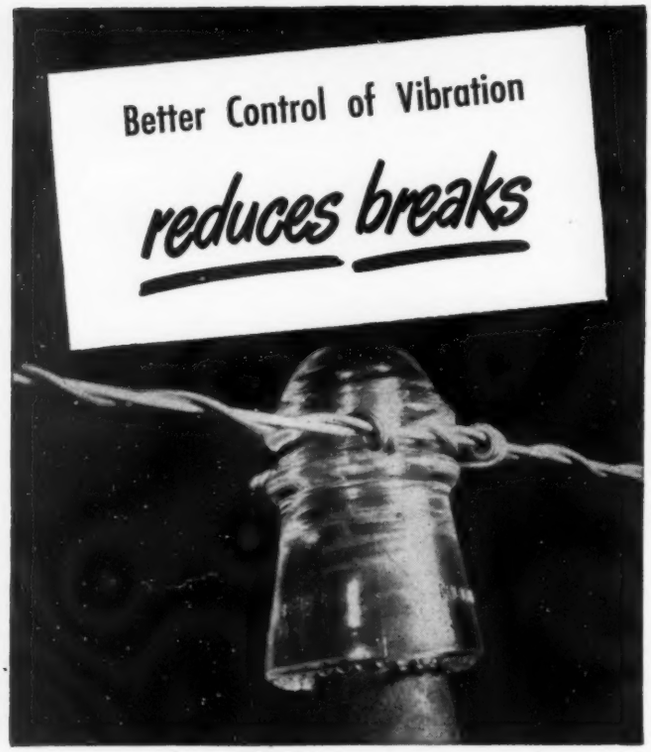
FOR DETAILED REFERENCE DATA *See* Our Listings *and* ADVERTISEMENT *in the* **1948** TELEPHONE BUYERS' DIRECTORY *and* COMPOSITE CATALOG

Order Today From

TELEPHONE REPAIR and SUPPLY COMPANY

DANIEL H. McNULTY, President and Manager

1760 Lunt Avenue **Chicago 26, Illinois**



THIS illustration shows U·S·S Amertel 135 Telephone Wire protected against vibration by an American Armor Rod and Tie.

Extensive tests in the laboratory and in the field have shown that these armor rods quickly dampen vibration and assure much greater life for the conductors.

The greater strength of U·S·S Amertel 135 and Amertel 85 permits much longer spans than are possible with B.B. grade wire. The number of poles can be cut in half for Amertel 135 with large savings in construction costs.

Comparison of Strength and Span Length

U·S·S Amertel	Minimum breaking strength—No. 12 B.W.G.	Heavy Loading Span Length
135 grade	1213 lbs.	350 feet
85 grade	795 lbs.	225 feet
B.B. grade	476 lbs.	150 feet

In addition to high strength, Amertel-135 and 85 wires have increased transmission efficiency at voice frequency. Write for complete engineering data.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND · CHICAGO · NEW YORK
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Mr. Thompson claims a proprietary interest in this memorable occasion for he, and The SoundScriber Corporation, pioneered practical telephone recording. Aimed at extending the utility of SoundScriber electronic disc recording, his researches revealed yet another use for his instrument . . . *telephone recording.*

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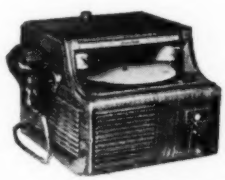

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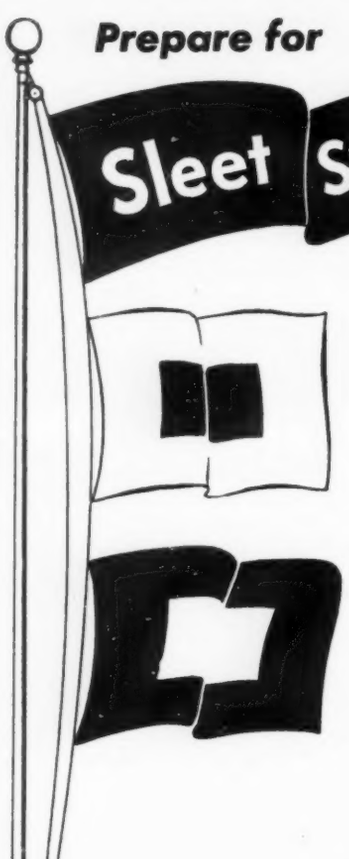

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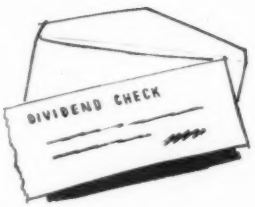
EDITORIAL

Highlights

OF AN INDUSTRY

THE CONVENTION put the spotlight on some matters of vital importance to the Independent telephone industry. These are things that need to be kept constantly in the minds of Independent telephone people and managements. They are the present highlights of the industry.

There is the matter of free enterprise—a thing probably all of us take too much for granted. Without free enterprise as it exists in this country, the telephone business would be a governmental monopoly—as it is now in so many countries. Yet there are forces constantly striving to destroy or impair our system of free enterprise. It will continue to exist only so long as Americans want it badly enough to fight for it.



There are the problems of the industry brought about by the continuing demand for more and more telephone service. Growth since the war has been phenomonal. but the public demand for service still continues.

To meet this demand, telephone companies must invest more and more money. To obtain that money, they must have earnings sufficient to guarantee investors their interest or dividends. To meet present day high-level costs, that means, in most cases, higher rates. Service—money—rates; they are all inseparable parts of one of the major problems of the industry today.

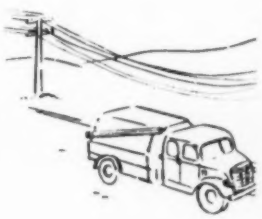
There is the matter of the difficulties facing many of the small, locally-owned and frequently individually owned exchanges and companies. The constantly increasing pressure on the small companies, of higher and higher costs, is producing an uneconomic situation in many of the smaller exchanges. The cumbersome method now existing for adjusting their rates to present-day conditions is a serious handicap upon the small company. The limitation upon them of the telephone rates subscribers are willing to pay in a small community, is another handicap.

This small exchange proposition is, in our opinion, a major problem of the Independent telephone industry.

There is the matter of the integration into Independent exchanges and systems of new devices—radio, carrier current, mobile service and so on. These matters are assuming more and more importance on convention programs. They are very important to Independent telephony, which cannot afford to lag behind in the production of modern types of telephone service. This is one of today's highlights of the Independent segment of the telephone industry.

Another phase of this same subject is the need of the Independent industry for specialists in these new things. Techniques of radio-telephony are very different from those of wired telephony. The Independent industry needs many people who are expert in these new techniques; without the "know how," new things cannot be done.

Altogether, we think, the convention gave telephone people plenty to think about. It was a good convention, worth its time and cost. It did not settle all the industry's problems—nor was it expected to do so. It did, however, put the spot light on those problems—which is the first stage toward their solution.



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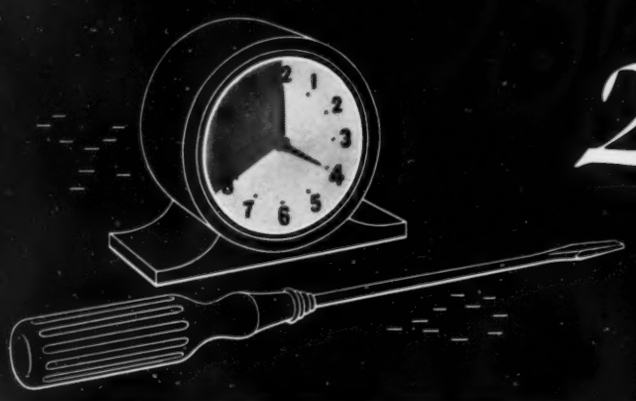
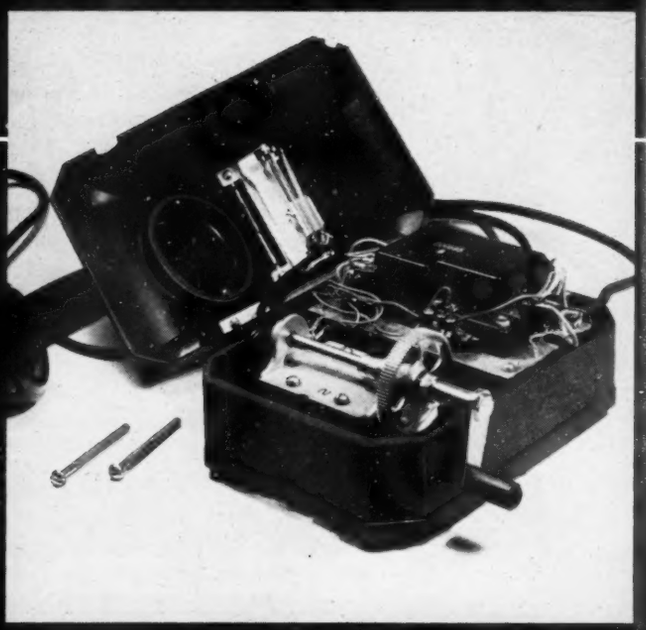


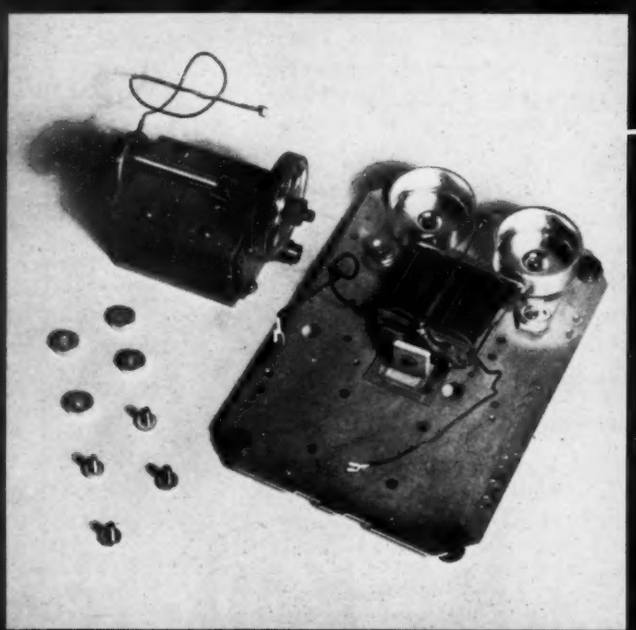
20 Minutes

Are all that's needed Magneto Telephone

1. Stromberg-Carlson No. 1248 magneto telephone, with the interchangeable base which makes this conversion job so rapid and easy. (Watch it change!)



2. Remove the sub-base assembly which contains generator, ringer and coil-capacitor assembly. Done by taking out TWO screws! (Easy, isn't it?)



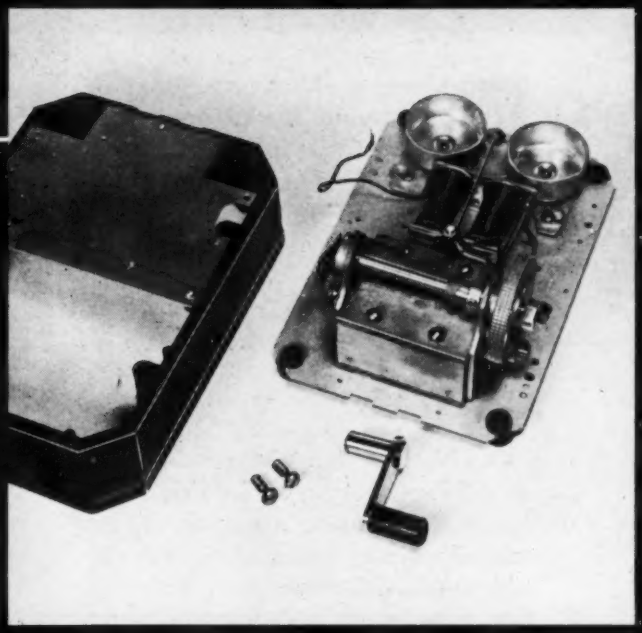
5. Remove the generator from the sub-base assembly. Done by removing FOUR screws and their related spacers. (Almost through!)

6. Mount the coil-capacitor assembly on the sub-base and connect the wiring for the No. 1243 telephone. Done with a screwdriver! (The job's done!)

...and a Screwdriver...

to convert a STROMBERG-CARLSON No. 1248 into a No. 1243 Common-Battery Instrument

3. Remove coil-capacitor assembly, which will be used again in the No. 1243 instrument. Done by loosening FOUR screws! (What could be simpler?)



4. Remove the sub-base assembly from the base. Done by unscrewing the handle of the generator and taking out TWO screws! (You're getting on!)

7. Stromberg-Carlson No. 1243 common-battery telephone, adaptable to Central Office or Dial use. Saves you both time and inventory! (Don't you need some?)

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The Reliable P-495 Sawtooth Discharge Blocks with carbon blocks of various shapes and thicknesses can be used in other types of equipment, such as any lightning arrester or cable terminal which uses standard carbon or copper blocks.

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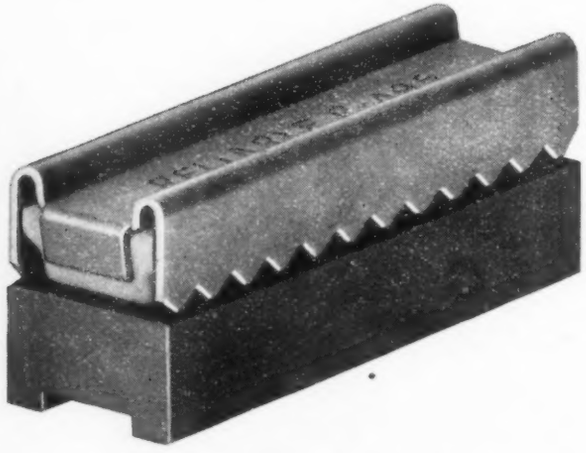
- Central office protectors



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OVER 40 YEARS' *Service* TO THE TELEPHONE INDUSTRY

Left Photo: New USITA president FRANK S. BARNES, (left) president of the Rock Hill (S. C.) Telephone Co. watches WESLEY M. ANGLE demonstrate equipment displayed at USITA Convention. Right Photo: USITA registration desk.

1756 Attend USITA Convention;

Frank S. Barnes Elected President

By

JOHN G. REYNOLDS

Managing Editor

DEVELOPMENT of remedial measures to relieve the present financial condition of telephone companies, mobile radio telephone, television network and local links, and the role of telephone communications in civilian defense in event of war emergency, were among the many subjects discussed at the 51st annual convention of the United States Independent Telephone Association, at the Hotel Stevens, Chicago, October 11-13.

Attended by approximately 1,800 officials of the Independent telephone industry, the convention earned for itself an "A +" rating as one of the most constructive and helpful conventions the industry has ever held. Addresses, discussions and conferences were regarded as "top" presentation of subjects of vital importance to the industry.

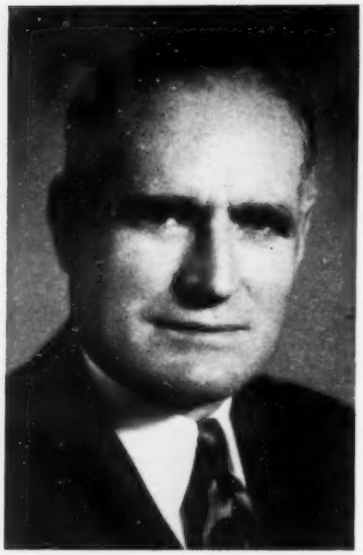
Directors Elect Frank S. Barnes

One new director, B. I. Noble, vice-president and general manager of the Lincoln (Neb.) Telephone & Telegraph Co. was elected to succeed John H. Agee who recently retired. In commemoration of his service as a USITA director since 1926—the longest of any present member—Mr. Agee was presented an illuminated scroll which described his contributions to the telephone industry and to the USITA. The scroll which was prepared by John P. Boylan, chairman of the board of the Rochester (N. Y.), Telephone Corp., paid tribute to Mr. Agee's service as USITA president and as chairman of the Employment Relations Committee since 1938.

Directors, whose terms expired this year, and who were reelected were: F. S. Barnes, Rock Hill, S. C.; A. O. Black, Butler, Pa.; John P. Boylan, Rochester, N. Y.; Charles S. Cadwell, Chicago, Ill.; Verne E. Chaney, Chicago, Ill.; Warren Clay, Hutchison, Minn.; Walter E. Dakin, Madison, Wis.; Harry Engh, Erie, Pa.; W. C. Henry, Bellevue, Ohio; Foster B. McHenry, Jefferson City, Mo.; and L. F. Shepherd, Lafayette, Ind.

The USITA Board of Directors selected Frank S. Barnes, president of the Rock Hill (S. C.) Telephone Co. to the post of president of the national association. Mr. Barnes, who has been a USITA director since 1935 and who has served in the telephone industry since 1916, succeeds Oscar Burton, president of the Gulf States Telephone Co., Tyler, Texas.

Mr. Barnes has spent his entire business career in the telephone industry except for two and a half years service in World War I with the American Expeditionary Forces in France as an Army officer. He has headed the Rock Hill Telephone Company since 1943, having become president after the death of his father who had been the company's chief executive. At the outset of his telephone career, following his graduation from Clemson College, S. C., in 1915, Mr. Barnes was with the Southern Bell from 1916 to his war service as an engineer and later as traffic chief. After the war he joined the Rock Hill company and rose through the ranks until he became president. He has been active in civic and state affairs and has served as vice-president of the Rock Hill Chamber of Commerce, a director of the Federal Savings and Loan Association, and as an active Kiwan-



HAROLD BOZELL, USITA First Vice President.

RAY DALTON, USITA Second Vice President.

CLYDE BAILEY, reelected USITA Executive Secretary.

ian. He was president of the South Carolina Independent Telephone Association for the period from 1934-1941.

Other top officers chosen by the board were: Harold V. Bozell, president of the General Telephone Corporation, was named first vice-president; Ray Dalton, vice president of the West Coast Telephone Co., Everett, Wash., was elected second vice president; Carl D. Brorein, president of the Peninsular Telephone Co., Tampa, Fla., was again selected as association treasurer, and Clyde S. Bailey, executive vice-president, was again reelected to that post in which he has served since 1940.

George C. Richert, association engineer, was elected as secretary pending completion of a survey of qualified candidates with an adequate accounting background. When such a person is found, it is understood that Mr. Richert will resign. He will at the same time carry out his duties as Association Engineer and Assistant Treasurer. A committee, named by the Board to choose a permanent secretary, is composed of retiring first vice-president Frank E. Bohn, president of Home Telephone & Telegraph Co., Fort Wayne, Ind., former USITA presidents R. A. Lumpkin, president of Illinois Consolidated Telephone Co., Mattoon, Ill.; and R. A. Phillips, president of Central Telephone Co., Lincoln, Neb.

The U.S.I.T.A. Board of Directors directed that the annual Executives' Conference scheduled for April 11 and 12 at the Edgewater Beach Hotel, Chicago, be continued as originally conceived and not so much as in the nature of a convention as in the recent past. It was also decided that representation at Executive Conferences hereafter should be confined to members of the Association.

Convention Photos

Photos on the opposite page were taken by the TE&M Camera during the USITA Convention. The November 1 issue of FORTNIGHTLY TELEPHONE ENGINEER will feature many additional convention photos.

The first day's convention activities were devoted to division conferences, each of which attracted overflow audiences. The plant conference with G. W. Miller presiding, presented speakers Daniel S. Seitz, Dr. J. A. Becker, Harold R. Hunkins and C. H. McLean. R. B. Still presided at the commercial conference, introducing D. A. Kafka, Ray Dalton and H. F. Moran. At the traffic conference, C. C. Donley presided over the activities which featured addresses delivered by Stuart H. Kelly, Mrs. Mary G. Hadlow, George Rose, W. A. Kern, and a round table discussion of "Traffic Handling Standards" with John F. Reding serving as moderator. H. C. White, presided at the accounting conference which presented addresses by R. A. Phillips, O. N. Westrup and E. J. Ward. Complete reports of the conferences appear in this issue.

USITA Executive Committee

Oscar Burton, Tyler, Texas.
C. S. Cadwell, Chicago, Ill.
H. M. Engh, Erie, Penn.
H. E. Hageman, Lorain, Ohio.
William C. Henry, Bellevue, Ohio.
L. W. Hill, Tarboro, N. C.
R. A. Lumpkin, Mattoon, Ill.
C. D. Manning, Chicago, Ill.
R. A. Phillips, Lincoln, Neb.

The general session on Tuesday, October 12 attracted an audience that filled the North Ballroom of the Stevens Hotel to overflowing. Following the invocation delivered by Rev. A. O. Hjerpe, pastor of the Second Presbyterian Church, Evanston, Ill., USITA president Oscar Burton addressed the convention on the subject "The Responsibility of Management." Mr. Burton's address appears on page 41 of this issue.

George C. Richert, association engineer, presented the report for the secretary's office. Mr. Richert paid tribute to the memory of the late USITA secretary Floyd Ridings, stating that "Floyd's work and loyalty to the Independent segment of the industry would always be remembered."

Mr. Richert reported that present membership of the national association as of September 30, 1948, was 2541, a growth of 46 members during the past year. The membership figure represents the highest membership in the history of the Association. He highly commended the State Associations for their part in the growth of the national group and urged members of the state groups to continue their efforts to strengthen both State and National associations by giving them the benefit of their ideas, suggestions and assistance.

Following Mr. Richert's presentation of the secretary's report, presi-

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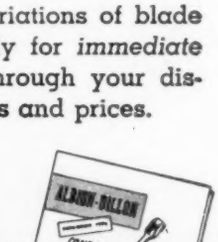

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GEORGE C. RICHERT, elected temporary USITA secretary.

dent Burton also paid tribute to the memory of Mr. Ridings, and announced that a committee consisting of three members, Jack Haley, Joe Byrne and J. C. Crowley had been appointed to prepare a resolution perpetuating on the minutes of the association the great value of Mr. Riding's contributions to the organization's success during the period he served as its secretary. Mr. Haley presented the resolution, and following its reading the convention audience arose and stood in silence for one moment in memory of "our friend and fellow worker Floyd Ridings."

B. L. Fisher introduced Hon. H. Lester Hooker of the State Corporation of Virginia who addressed the audience on "Service And Financial Problems Confronting The Indutsry." In his pre-address remarks, Judge Hooker paid high tribute to Mr. Fisher and stated that Mr. Fisher operated "*the only telephone company that he knew of, where the subscribers came before the commission and requested that their rates be increased.*" Judge Hooker also praised the work of USITA executive secretary Bailey and stated that "*every regulatory commission in the United States likes Clyde Bailey and has explicit confidences in his integrity and ability.*"

Due to the importance of Judge Hooker's address and the many requests from conventioners that we print his address, the complete text of his remarks is published on page 54 of this issue. It is well worth your careful reading.

The final activity at the Monday morning session was the appointment

(*Please turn to page* 68)

Left Photo: Group of officers and executives of Automatic Electric Co. includes H. C. SMITH, L. H. WARNER, T. F. GARY, L. L. RUGGLES and C. S. CADWELL. Right Photo (l to r): Mrs. FOSTER B. McHENRY, Mrs. E. H. DANNER, E. H. DANNER and FOSTER B. McHENRY.

The Responsibility of Management

By
OSCAR BURTON
USITA President

WHEN we look at the accomplishments of the past, review *our* present standing and ask *ourselves* what about the future, the need for group leadership, such as is provided by our State and National Telephone Associations, is apparent. Whether the confidence in the future of the Independent segment of the Telephone Industry by those stalwark pioneers who organized the Association 51 years ago is exceeded by those of us engaged in the business today is debatable; but none can underestimate their courage in the beginning nor their fortitude in facing the hard years ahead.

This amazing age, with its many cross-currents and clash of political ideologies at home and abroad, likely at any moment to change the career of an individual or an industry, calls for leadership of the highest order. During these chilly days of a cold war, inflation and general upset, we are bound to be affected by what is happening all over the world. It is no time, however, to conclude that everything is about to go to smash and that mankind is set to take the final "toboggan ride" to ruin. Rather than take such a gloomy outlook, it behooves management to take a close look at its responsibilities and make constructive and objective plans to meet those responsibilities.

OSCAR BURTON

Our Responsibility To the Public

I HAVE placed our responsibility to the public first because without the public—our patrons—there would be no Telephone Industry. Our responsibility, therefore, is to see to it that our service shall at all times be adequate, dependable and satisfactory to the users. The management of the telephone company, operated generally by public consent without ordinary competition, is, therefore, in the position of a trusteeship obligated to provide adequate service in the best interest of convenience and necessity. Management has demonstrated its alertness to improve plant techniques. Today's service demands can only be met by an increased awareness of the need for the development of more efficient plant methods and practices that will permit the job to be done more expeditiously.

Major development of the service and consequently its greatest value to customers can only be attained by rate schedules which give proper weight to relative values of service required by different groups of customers at charges well within the ability of the maximum number served to pay for it.

All of us realize that to fulfill our obligations to the public, higher rates must be obtained in order to meet the higher level of costs upon which our business, like all other businesses, must be conducted. Some of us have found that post-war increases in

rates are already insufficient to enable us to meet our fixed charges and provide for essential improvements and expansions to our plants. As we meet here today discussing our problems, we do not know, nor can we predict, just what the elevation of our cost of doing business may reach. Happily, there is evidence of appreciation on the part of the public and of public officials who control the rates we charge that the cost of producing satisfactory telephone service has gone up faster than the rates charged for it.

Our Industry goes along not expecting speculative profits, endeavoring to give its stockholders regular and moderate dividends, the balance, if any, to be "plowed back" into improvements of facilities. Thus, in our business any profits beyond those consistent to financial safety and a high grade of service go to the users and not to the owners. Earning less than safe returns will endanger the service, both present and future, and will not permit us to meet our threefold obligations: to the Public, to the Employees and to the Stockholder.

Our Responsibility To the Employees

IN REVIEWING our second management problem—our responsibility to our employees—we again find that it is based on the ability of our Industry to obtain sufficient rates for its service to enable it to provide the ingredients that we are obligated to give to the men and women who work with us. These ingredients are: reasonable pay, steady employment, good working conditions, a chance to get ahead, to be treated with respect and other reasons for really liking their jobs.

The Telephone Industry offers its employees a degree of job stability and security that excels that of most industries. This has been accomplished as a result of the development of employment policies and practices designed to foster opportunity for excellence in performance and a reward for job accomplishments. Our Industry can take justifiable pride in the fact that it has been alert to its responsibility to provide its employees working conditions that are conducive to good employee morale so essentially necessary to the rendition of a continually improving quality of service. The continued proper discharge of this responsibility involves frequent examination of work schedules, with a view of obtaining the highest degree of employee satisfaction consistent with sound operation of the business.

Employee satisfaction with the wage levels maintained by the Independent Telephone Industry can probably be best gauged by the success that has attended the Industry's efforts to attract and hold competent people. The foresight which management has displayed in the judgment it has exercised with respect to wage policies is demonstrated by the fact that the Industry is not lacking for experienced and qualified personnel to fill supervisory and managerial positions as those opportunities for advancement are presented.

In their contacts with management on wage matters our employees should be impressed with the fact that our earnings are regulated; that such regulations affect, to a considerable degree, the wages of all labor employed at all levels in the business. Management is, of necessity, compelled to afford fair and equitable treatment to all the factors which contribute to the success of the business, the customers, the employees and the stockholders. Because ours is a regulated business, the level of wages it is able to pay definitely lags behind not only the upward but also the downward movement in the cost of living cycle.

Our Responsibility To the Stockholders

NOW LET'S take a look at our responsibility to those who hire out their funds to the industry and provide the life-blood for the industry's continued existence. Thus far we have met this responsibility by providing a reasonable return to stockholders. To the extent that our responsibility to the stockholders has been met, present and prospective investors can be expected to provide additional risk capital which the industry must have to meet the requirements for plant additions.

In one way the employee has a considerable advantage over the investor of capital. He gets his pay before, and whether or not, the investor gets anything, either interest or dividends, with a prior lien on the gross revenues of the business. If the employee gets too much of that revenue and, in consequence, the investor gets too little or nothing at all, there won't be any more new capital invested in the business. And that kind of situation can bring on plenty of trouble for all concerned.

Venture Capital Must Be Encouraged

One thing that has made higher wages possible in industry is that capital money has been cheaper, during several years past, than ever before. Now, however, there are increasing signs that investors are not so willing to put money into business enterprises at prevailing low interest rates. Investors, including the big institutional investors such as insurance companies, have apparently made up their minds that they are not going to supply all the money needed for buying things for employees to work with or on unless they get a larger share of the gross revenue than they have been getting.

Today, it appears that one of management's prime responsibilities to its present and future stockholders is the continuance of its established pattern of encouraging venture capital and rewarding it well. Growth of small business is impossible without the energizing funds of venture capital. To the extent that we "dry up" the sources of venture capital—and unfortunately the process has gone a long way—to that extent, we restrict the launching and development and expansion of small business everywhere.

We need not worry too much about initiative or ambition or vision. These are inherent in the individual spirit of the people of this country. It is the "good old American way of life." We need only to remove obstacles and artificial barriers; to nurture and maintain an economic environment in which small business and big business alike can prosper and make their fullest contribution to advancing the standards of living for all.

What we should strive for in meeting all of the responsibilities of management: to the public, to the employees and to the stockholders, is understanding, patience, open-mindedness and courage. These are qualities that dissolve differences and make for cooperation, team-work and harmony. They lead to a permanent solution—not an armistice.—THE END. (*Abstract of address presented at the* 1948 *USITA Convention.*)

Convention Photos

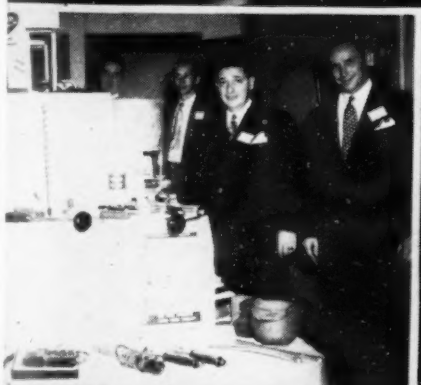
Photos on the opposite page were taken by the TE&M Camera during the USITA Convention. The November 1 issue of FORTNIGHTLY TELEPHONE ENGINEER will feature many additional convention photos.

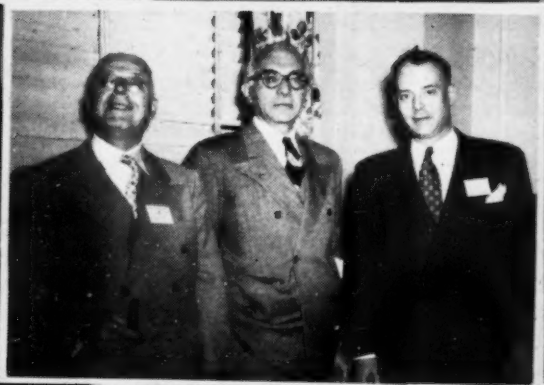
CTROX

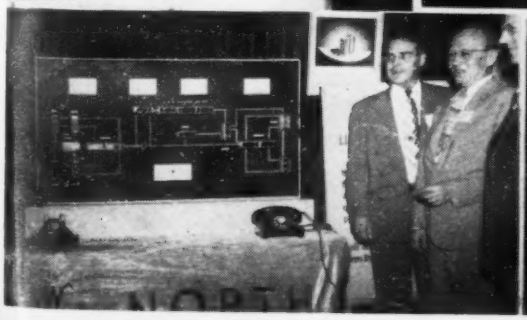
SAFETY EQUIPPED

AUTOMATIC ELECTRIC

WIN
this STROMBERG-CARLSO
radio by correctly answerin
this question:







The Role Of Communications

in the Civil Defense Program

By
HERBERT J. SCHROLL
Communications Advisor,
Civil Defense Planning

SINCE MARCH, a small group of us have been seeking to formulate a sound, effective, and workable program of Civil Defense for the nation that could be quickly expanded in the event of national emergency. In addition, we have been charged with the development of a plan for a permanent Federal Civil Defense agency, to initiate interim measures which may seem necessary or appropriate, and draft any legislation required for the Civil Defense program.

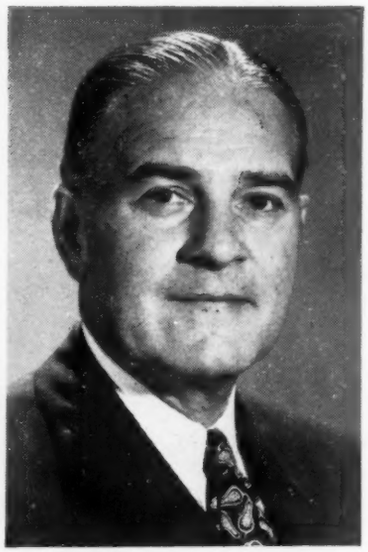
The plans developed are based upon world-wide experiences during World War II and adapted to the needs of this country and its territories and possessions. The final recommendations which will soon be made known to the American people will incorporate the pooled thought of leaders drawn from industry, science, Government, the Military Establishment and allied fields. In this connection, I would like to express our appreciation for the cooperation on the part of the United States Independent Telephone Association, your President, Mr. Burton, and Mr. Clyde Bailey and George Richert of your Washington office.

In order that you may judge the importance of communications and the extensive demand for various categories of facilities and services created by the peculiar and varied exigencies of Civil Defense, I would like to take a few minutes to tell you something about the need for Civil Defense.

Need for Civil Defense

The necessity for Civil Defense should be axiomatic. Even the most casual reader of newspaper headlines must be convinced of the necessity for devising security measures in the interest of complete national defense.

Science has so reduced the elements of time and space that every spot on the globe is within range of some weapon; hence, strategic areas become potential targets and all civilians become potential victims. War becomes personalized, even for those who do not bear arms.



HERBERT J. SCHROLL

Civil Defense is not preventive—it does not actively stem, hinder or prevent the attack. It does not shoot back. It is not punitive—it is designed to be remedial—to anticipate the attack, minimize the effect, reduce casualties, save lives, render aid and assistance, check the development of secondary damage, restore the essential facilities; in effect, cushion the blow and aid recovery therefrom.

Civil Defense goes into action at the moment of danger with trained civilians employing proven techniques to minimize the effects of an attack and to restore insofar as practicable the normal facilities.

Civil Defense operations will of necessity be centered around communities, the utilization of volunteers and the basic principle of self-help, neighborly and community assistance. Such an organization of civilians led by civilians thus releases the Armed Forces to carry out military missions.

The community is the basic unit of protection against common danger and minor catastrophes. Statewise and nationally those locally organized protective and emergency welfare services are supported by services designed to meet the demands of disaster that overwhelm facilities. Under a carefully organized Civil Defense system, the nation would therefore further benefit in time of peacetime disaster.

All of you are familiar with such general services as police and fire services. The Civil Defense program of course includes these services and also plans on a large scale for rescue, emergency feeding, shelter, clothing, first aid, evacuation, medical services, hospitalization, essential utility repair and restoration, sanitation, control of panic, mortuary services, and the like. Many relatively new services, such as radiological defense, are also incorporated.

The possibility of successful attack must be included in all defense planning. It is essential that we be prepared to deal effectively with devastating results of an enemy attack. Certainly, organizing to minimize the effects of atomic or other weapons is feasible.

In envisioning the operations of Civil Defense we must be realistic and determine requirements on the basis of war; for example, we should anticipate situations many times larger than the disaster which occurred in Texas City.

Fundamental Communications Requirements

In each area or community the communications needs will vary depending on geography, size, strategic importance and the likely extent of Civil Defense operations.

Adequate and dependable communications are vital to the effectiveness and success of the organized operations of Civil Defense. They are the nerve system of Civil Defense.

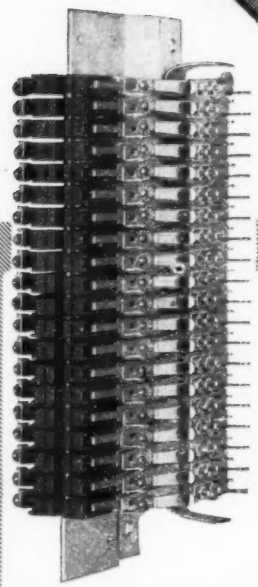
In the event of an enemy attack against the United States, the task of operating a Civil Defense system with all the many phases of air raid warning, of panic control, or rescue, of aid, of restoring facilities, would be almost insuperable.

Federal, state and local air raid warning systems are imperative so that civil authorities and the public in the path of approaching enemy aircraft may be alerted as to the imminence of attack, time when the attack may be expected and, if possible, its potential effectiveness. These systems will require the extensive use of communications services including the provision of private line networks.

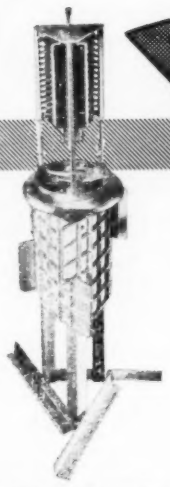
The establishment of Civil Defense state and local control centers is contemplated. They will be essentially

(*Please turn to page* 72)

Protection and Distribution

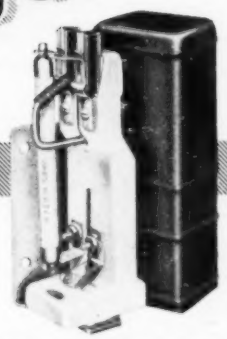


NO. 3800 CENTRAL OFFICE PROTECTOR. For cable termination, and protection of central office equipment against high potentials and sneak current. Available in 20 to 101 pair sections.

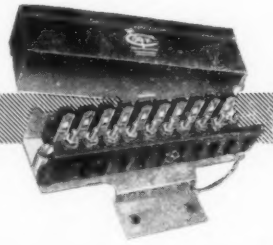


TERRA-TERM UNDERGROUND DISTRIBUTING UNIT. Terminates, cross-connects and distributes 26 to 152 pairs of cable. For airports, residential areas and public parkways; P.B.X., railroad, police and fire alarm systems.

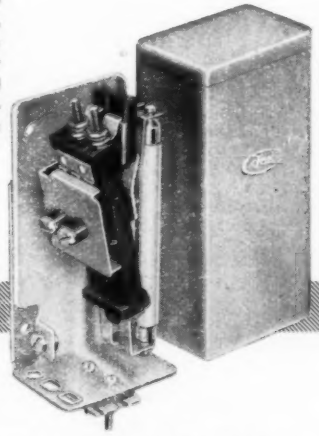
X-B CABLE TERMINAL. For distribution of drop wires in area where lightning or power circuits are not a factor. Light, strong, compact, easy to install. Completely weatherproof. In 6 to 26 pair sizes.



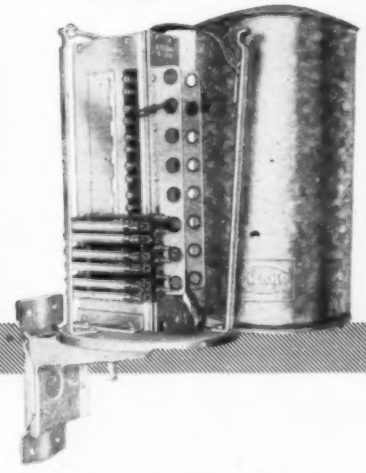
TYPE O SUB-STATION PROTECTOR. Single circuit protector for both indoor and outdoor use; made for various types and lengths of fuses; with Tru-Gap dischargers that are not subject to grounding troubles.



NO. 7 HIGH POTENTIAL LIGHTNING ARRESTER. Outdoor pole type arrester which provides lightning protection and static drain for five pairs of open-wire circuits; widely used for protection of drop wires and unprotected cable terminals.



RO OUTDOOR SUB-STATION PROTECTOR. Equipped with weatherproof hood for outside mounting. Provides dual protection with an air gap arrester on both instrument and line side of fuse. Heavy steel bracket for rough handling and subscriber abuse.



TYPE S-20 POLE CABLE TERMINAL. A combined protected and unprotected terminal. H20 Protector units of one pair each, containing fuses, dual gap arresters and drop wire terminals are added as required. Drop wires terminate in front.

● There IS a reason why the majority of telephone companies have standardized on Cook Terminal and Protection equipment. They have learned through experience extending over nearly 50 years that Cook equipment is dependable and correctly priced. You too can profit by insisting on Cook for the best in terminals and protection.

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Telephone Protection & Distribution Engineering Since 1897

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Demands For Service And

Regulatory Short Cuts

By

HON. HARRY M. MILLER

Chairman,
The Public Utilities Commission of Ohio

TODAY'S demands upon your industry, as well as upon all private enterprise subject to regulation, can be adequately met only if courage, intelligence, and a devotion to the highest ideals of public service are demonstrated by you, and by the regulatory commissions. In a limited sense you represent the investors in your enterprise, and in a like sense we, the regulatory commissions, represent the consumers. In a broader and deeper sense, together, we represent a substantial segment of our economic and social life. In an historic sense, the two of us cannot indulge in a "sparring match" without doing violence to the public interest and our democratic way of life.

With this concept of the nature of our obligations and with a determination that we shall be guided by it, I am confident that the regulatory commissions can be helpful in solving the problems that confront your industry. It is imperative that we solve them together in this spirit, because unless we do, you will no longer be managers, and we, commissioners —we, together will be civil servants working for a government bureau.

In the absence of statutory or constitutional limitations imposed upon state commissions, they are no longer bound by legalistic formulae in the determination of just and fair rates. In the prescription of rates it is generally conceded that public utilities are entitled to fair compensation for the services they render——compensation which is fair and reasonable *at the time* they are rendered, or are to be rendered. A just rate must be so—not only in legal, but also in an economic sense. Unless regulation can prescribe such a rate under our present system, the only alternative is public ownership.

The exercise of the latitude which has been given to regulatory commissions, and the effects which arise therefrom, impose a solemn responsibility.

I have mentioned the claim that the regulatory process does not promptly recognize the impact of sudden changes in costs, and other factors. The claim itself suggests that something be done to "speed up" rate adjustments.

In accomplishing this objective I believe that you, yourselves, can make a substantial contribution if you make it a part of your program to keep the commissions of your own states as fully advised, currently, as you can. Many of the companies doing business in our state follow this practice, and in addition, by every means available, inform their subscribers of their situation, and of their need for increased rates. Too often the conditions affecting a company are not made known either to the Commission or to the subscribers until a rate case is filed. Many of the questions which would arise in the course of a rate case hearing can be answered to the satisfaction of all interested parties if proper, preliminary information has been supplied.

> ***Convention Photos***
>
> *Photos on the opposite page were taken by the TE&M Camera during the USITA Convention. The November 1 issue of FORTNIGHTLY TELEPHONE ENGINEER will feature many additional convention photos.*

In this respect it should be said that the regulatory process must measure up to the exigencies of the situation. It is desirable that regulated industry be able to attract to it that type of employee which will assure the character and continuity of service to which the public is entitled. A public utility must make employment by it, having due regard for the factors of possible advantage which it can offer, as attractive as other industries having comparable requirements.

The public demand for service can be met only if facilities are available. Utilities can obtain facilities only by the expenditure of money, and money must come from the investor. The demand for more and extended service is a present demand, and so is the demand for money immediate. The regulatory process must gear itself accordingly. Utilities must first attract the necessary capital, and, secondly, pay for its use. The ability to promptly attract, and to pay for the use, of capital are directly related to the ability of the utility to secure a fair return upon it.

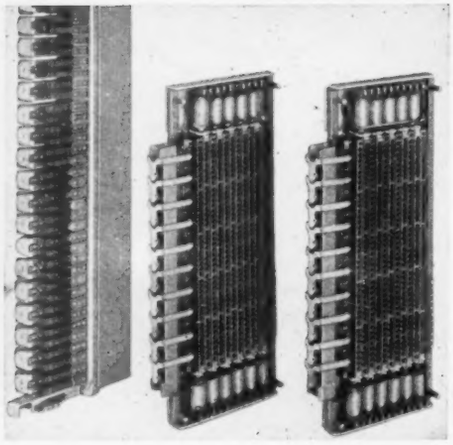
In our own state we have tried, within the limits of what we deem to be proper, to speed up the processes of making rate adjustments.

In the determination of just and reasonable rates the Ohio law requires that due regard shall be given to the value of the property used and useful in rendering the service, and that such value shall be determined by ascertaining the cost of reproduction new of the property, and deducting therefrom the observed depreciation. In the application of this law prior to 1947 our Commission pursued the laborious and time-consuming practice of making detailed inventories and appraisals of every company seeking a rate increase. Today, we are processing cases on a district-wide, system-wide, or even state-wide basis, not on an exchange basis. We no longer make valuations, but check those supplied by the companies. We are likewise encouraging the companies, where their records are known to be adequate, to abandon the use of detailed inventories, and in lieu thereof to file a valuation prepared by trending their book costs. This practice results in tremendous savings in time to the company, and to us, and in savings of money to the rate payer. Further, once the price trend and surviving asset data have been developed, checked, and approved in one case, the saving in time in a subsequent case is very great, and the possibility of variation in reliability of the result is very small. Our engineering department has developed standards and "yardsticks" by which the values for a given account, or for the total property, may be investigated for reasonableness, whether based upon a priced inventory, or trended book costs. These "yardsticks" have been obtained from an analysis of telephone valuations in the files of the Commission covering a long span of years. Any valuation submitted by a company which does not reasonably meet the tests applied, is scrutinized.

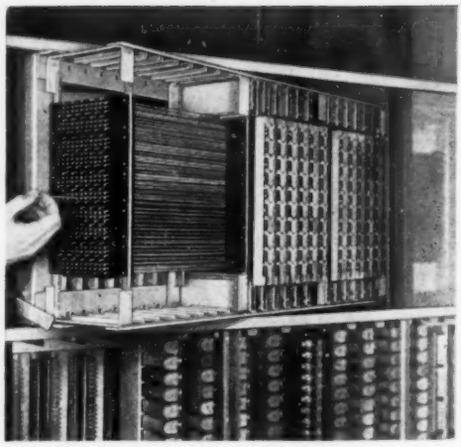
The demand for prompt action in the regulatory process has further been met by granting temporary or emergency rate increases, conditioned that the rate be collected under bond.

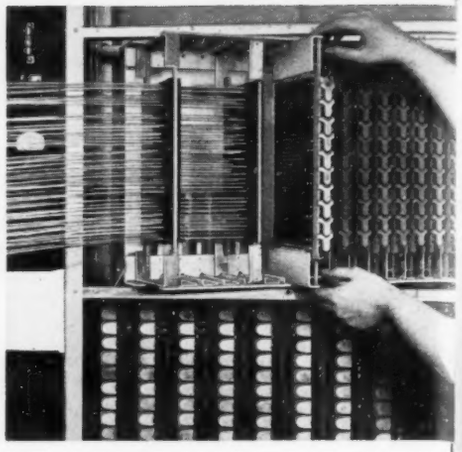
(Abstract of address presented at the 1948 USITA Convention.)

In two hours or less . . . you can add a



ONNECTOR RELAY BAR • FINDER SWITCH • CONNECTOR SWITCH





1 The three units above comprise a finder-connector link. They are shipped from the factory in separate cartons, wired and tested, ready to be jacked-in. They are carried in stock for immediate shipment.

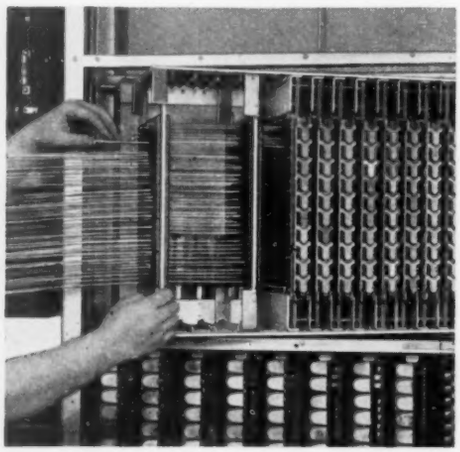
2 To jack-in the finder and connector switches, the multiple is swung out as in the above photo. The stainless steel bars which connect the switches to all the lines in the multiple are then pulled out just far enough to permit jacking-in the switches to be added.

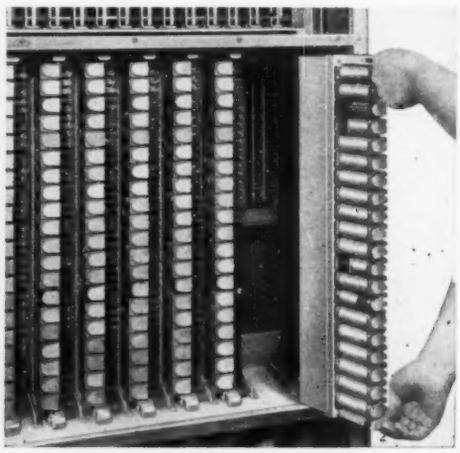
3 The finder and connector are then merely jacked-in as shown above. The jacks are already wired in the switchboard when it is originally assembled at the factory. Any number of switches, up to the capacity of the board, may be added at this time.

4 (below) The line multiple bars are then pushed back into place. They connect all the finder-connector switches to all lines in the multiple. Bakelite guide blocks make it impossible to insert them wrong, eliminate the possibility of opens or transposed wires in the multiple.

5 (below) The control relays for each link are mounted on a single relay bar, and are merely jacked-in as shown in the above picture. There's no wiring, no soldering.

Total Time... 1 or 2 hours

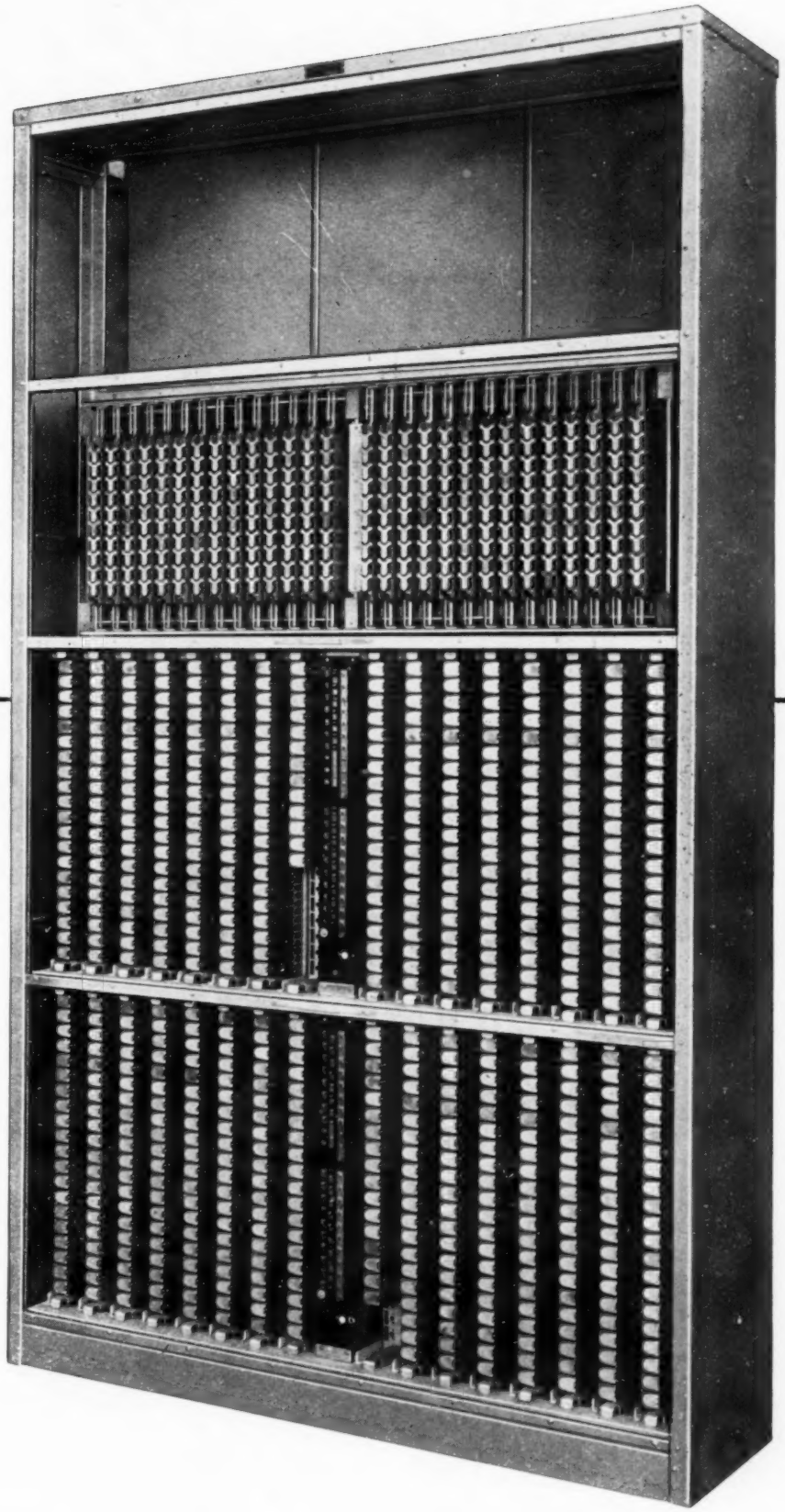




Thus, in one hour or two, your own switchboard man has added a finder-connector switch to your Leich Dial System. There've been no factory installers, no wiring or soldering to do, no chance for a mistake. The only expense has been the relatively inexpensive cost of the units themselves. Write for catalog. Leich Sales Corporation, 427 W. Randolph St., Chicago 6, Ill.

LEICH MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907

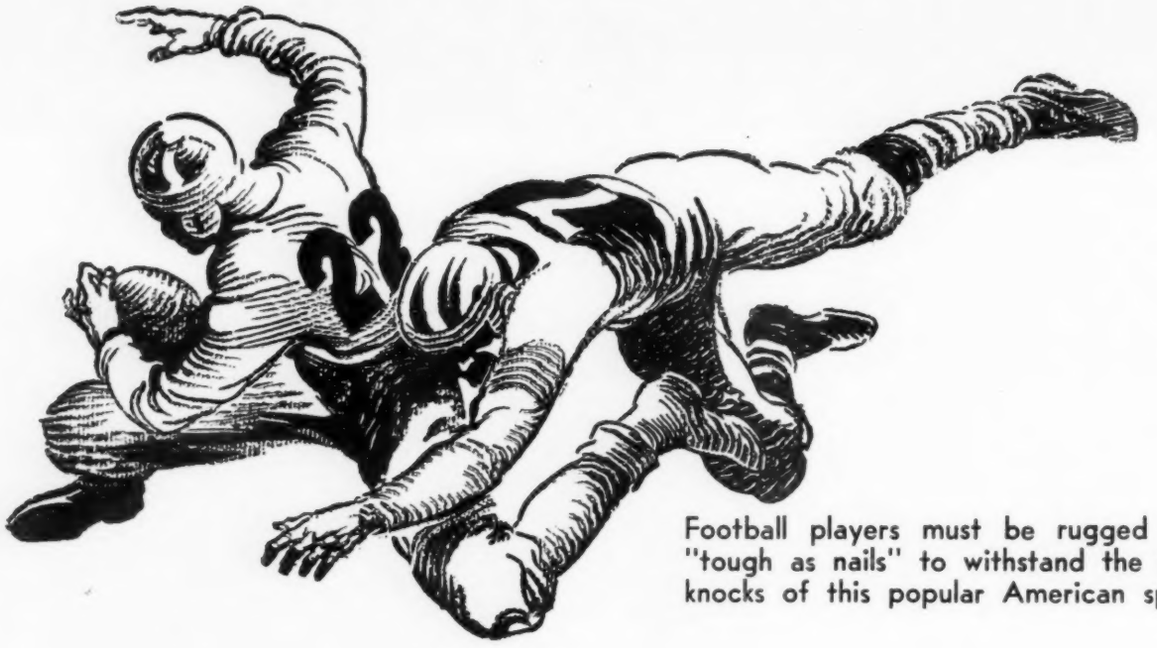
finder-connector link to your Leich Dial System



It's so easy to add a finder-connector link to a Leich Dial Switchboard. There are no connections to be soldered. The three parts that make up a link can be jacked-in by the average switchboard maintenance man in an hour or two. It is impossible to make a mistake. Opens or transposed wires in the multiple are a thing of the past.

Here indeed is provision for future growth or traffic changes, more simplified and less costly than was ever before possible in a dependable, relay-type dial switchboard.

Write today for the catalog which completely describes this revolutionary new Leich Dial System. Address Leich Sales Corporation, 427 West Randolph Street, Chicago 6, Illinois.



Football players must be rugged and "tough as nails" to withstand the hard knocks of this popular American sport.

Telephone wire must also be constructed to withstand the numerous abuses it is subjected to. You can count on ACORN'S NEOPRENE JACKETED DROP WIRE for this "tough as nails" quality which gives it long-life and an ability to hold maintenance and replacement cost to an absolute minimum.

32 *YEARS of Specialization in the manufacture of communication wires has built an enviable performance record for . . . .*

ACORN Drop Wire

also Bridle, Interior, Tree, Ground, Switchboard, Pothead Cable Terminal, Instrument, Fixture, and Buried Wire.

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What Is Ahead On The *Labor Relations Front?*

By
JOHN H. AGEE
Chairman,
USITA Employment Relations Committee

SINCE THE last annual convention, our industry, and particularly that large segment consisting of several thousand small telephone companies, has been greatly concerned with the large number of bills introduced in Congress for the purpose of amending the Fair Labor Standards Act and substantially increasing the minimum wage. Some 10 or 12 bills were introduced, all of which provided for an increase in minimum wages from the 40c per hour rate to 75c per hour. Some of these bills provide for a graduated minimum up to $1.00 per hour. President Truman endorsed and urged 75c an hour as a minimum wage.

The Association, naturally, opposed this increase in minimums, so far as small companies were concerned. In addition to testimony presented before the sub-committees of the Labor Committee of the House and the Senate by Clyde Bailey and Jack Crowley, secretary of the Minnesota State Telephone Association, the reasons for opposing the increase were very ably presented before these sub-committees by representatives of the Iowa Telephone Association. Clyde McFarlin, president of the Montezuma Telephone Co., Montezuma, Iowa, now a member of the Employment Relations Committee, appeared before the sub-committee of the House Labor Committee and forcefully presented an excellent argument in opposition to the proposed legislation. Secretary William Miller, of the Iowa Association, likewise presented an able and persuasive argument before the Senate sub-committee.

We cannot forecast just what will be done in this matter by the next Congress. Probably it will depend largely upon which of the two major parties is victorious in the November election. In any event, it will require close attention and undoubtedly active work on the part of the national Association, if the Independent industry, and particularly the smaller companies, and, I should emphasize, the public in general, are to be protected from unreasonable costs.

JOHN H. AGEE

Wage Increase Demands

Rather recently I have discussed labor matters with several men whose work is along statistical lines and whose research requires them to visit the top executives of our largest industries and the heads of labor unions. Opinion seems to prevail that organized labor is going to ask for another round of wage increases very shortly. Some of the labor leaders have been quoted as saying that if the Republican Party is victorious at the November election, labor will insist upon further increases in the period between election and the opening session of Congress.

That is a very short period, of course, in which to insist upon wage increases, and many contracts will not have expired during that period. On the other hand, many of the wage contracts signed this past spring, covering a two or three year period, contain a provision which would permit the wage question to be reopened, if the Bureau of labor statistics should indicate a substantial increase in the cost of living. I believe that a number of the Bell Companies negotiated contracts of that character. It is altogether likely that industry generally will be faced wih further demands for higher wages, although in many of the larger situations it is understood that these demands will emphasize mostly what are known as "fringe" increases: that is, sickness and hospital benefits, higher pensions, and similar employee benefits.

The Employment Relations Committee of our Association has several unfinished tasks which may well engage its careful attention. The interpretative bulletins issued the past few years by the Administrator of the Wage-Hour Division were cancelled this past spring, as you will remember. They have not yet been fully reestablished. We made an appearance last fall in an attempt to broaden the definition of administrative, executive and professional employee. We sought to have the 20% rule abrogated. So far we have been unsuccessful in this matter but there is so much justification for the elimination of the 20% rule in considering the equities of paying overtime to administrative and executive employees, that I think it should be strongly urged. There are a number of telephone companies who would like to see a more liberal rule in the matter of learners' rates. We discussed this with Mr. McComb a few months ago and, while he appeared sympathetic, nothing has been done in the matter. This should be on the program of the committee.

As I retire as Chairman of this Committee, I want to express my personal thanks and appreciation to the officers and Board of Directors of the Association for their fine cooperation. The Washington office, and particularly our efficient executive vice president, Clyde Bailey, has rendered yeoman service on behalf of our work. I want to thank the large group of folks constituting telephone management and the hundreds of other telephone people throughout the country who have, during the past ten years, responded so promptly to our calls for help. Of course, the members of my committee deserve the gratitude of our entire Association for the time and work they have devoted to the cause.

(Abstract of paper presented at the 1948 USITA Convention.)

57 TO DATE IN '48!

FROM January 1 to September 15, fifty-seven new* Strowger automatic exchanges were placed in service—fifty-seven exchanges in less than nine months!

Fifty-seven more exchanges added to the many hundreds that Automatic Electric had previously engineered and produced—adding to an unequalled wealth of experience in this field.

Fifty-seven more exchanges for which independent telephone men selected Strowger Automatic because of its proved record of performance. They saw no reason to experiment.

That record of fifty-seven completely NEW* exchanges in just a few months is proof that independent telephone men prefer Strowger Automatic—and are getting it, in ever-increasing quantities.

***NOT including many thousands of lines of additions to existing exchanges.**

ALDERWOOD MANOR, WASHINGTON, 80 LINES
West Coast Telephone Co.

ALMOND, WISCONSIN, 100 LINES
Almond Telephone Co.

ATLANTICS, NORTH CAROLINA, 50 LINES
Carolina Telephone & Telegraph Co.

AVON LAKE, OHIO, 1,000 LINES
Lorain Telephone Co.

BEEMER, NEBRASKA, 110 LINES
Cuming County Independent Telephone Co.

BISCOE, NORTH CAROLINA, 150 LINES
Central Telephone Co.

BLUFF CITY, TENNESSEE, 200 LINES
Inter-Mountain Telephone Co.

CONNEAUT LAKE, PENNSYLVANIA, 200 LINES
Meadville Telephone Co.

CHINO, CALIFORNIA, 600 LINES
Associated Telephone Co., Ltd.

CLAREMONT, CALIFORNIA, 800 LINES
Associated Telephone Co., Ltd.

COVINGTON, VIRGINIA, 1,400 LINES
Clifton Forge-Waynesboro Telephone Co.

DUNN, NORTH CAROLINA, 1,150 LINES
Carolina Telephone & Telegraph Co.

EMLENTON, PENNSYLVANIA, 325 LINES
Peoples Telephone Corp.

EPHRATA, PENNSYLVANIA, 900 LINES
Denver & Ephrata Telephone & Telegraph Co.

FREDONIA, NEW YORK, 800 LINES
Dunkirk & Fredonia Telephone Co.

GRANADA, CALIFORNIA, 300 LINES
California Water & Telephone Co.

HALIFAX, VIRGINIA, 250 LINES
Virginia Telephone & Telegraph Co.

HICKORY, NORTH CAROLINA, 2,460 LINES
Hickory Telephone Co.

HILDEBRAN, NORTH CAROLINA, 30 LINES
Hickory Telephone Co.

IMPERIAL, MISSOURI, 100 LINES
Ozark Central Telephone Co.

INYOKERN, CALIFORNIA, 100 LINES
Interstate Telegraph Co.

IRVING, TEXAS, 600 LINES
Southwestern States Telephone Co.

IVORS, VIRGINIA, 75 LINES
Home Telephone & Telegraph Co. of Virginia

JONESBORO, TENNESSEE, 300 LINES
Inter-Mountain Telephone Co.

KILAEAU, T. H., 100 LINES
Mutual Telephone Co.

LA VERNE, CALIFORNIA, 400 LINES
Associated Telephone Co., Ltd.

LAKEVILLE, MINNESOTA, 180 LINES
Central Telephone Co.

LEWISTON, NORTH CAROLINA, 50 LINES
Carolina Telephone & Telegraph Co.

LEOLA, PENNSYLVANIA, 175 LINES
Enterprise Telephone Co.

LIMA, OHIO, 1,600 LINES
Lima Telephone & Telegraph Co.

MARSHALLBERG, NORTH CAROLINA, 50 LINES
Carolina Telephone & Telegraph Co.

MENTONE, CALIFORNIA, 160 LINES
California Water & Telephone Co.

MALCOLM, NEBRASKA, 50 LINES
Lincoln Telephone & Telegraph Co.

MANLIUS, NEW YORK, 250 LINES
Lewis & Hall Telephone Co.

MT. CARROLL, ILLINOIS, 200 LINES
Middle States Telephone Co.

MINOT, NORTH DAKOTA, 4,000 LINES
Northern States Power Co.

NATURAL BRIDGE, VIRGINIA, 60 LINES
Raphine Telephone Co.

NANAKULI, T. H., 100 LINES
Mutual Telephone Co.

PANAMA, NEW YORK, 80 LINES
Jamestown Telephone Corp.

POPLAR BLUFF, MISSOURI, 2,050 LINES
Southeast Missouri Telephone Co.

PLATTEVILLE, WISCONSIN, 1,200 LINES
Platteville Telephone Co.

POMONA, CALIFORNIA, 4,200 LINES
Associated Telephone Co., Ltd.

ROBERSONVILLE, NORTH CAROLINA, 325 LINES
Carolina Telephone & Telegraph Co.

STAATSBURG, NEW YORK, 150 LINES
Red Hook Telephone Co.

SAN DIMAS, CALIFORNIA, 400 LINES
Associated Telephone Co., Ltd.

SAN FERNANDO, CALIFORNIA, 3,050 LINES
California Water & Telephone Co.

SEPULVADA, CALIFORNIA, 1,000 LINES
California Water & Telephone Co.

SANDY LAKE-STONEBORO, PENNSYLVANIA, 200 LINES
Meadville Telephone Co.

SUSSEX, WISCONSIN, 100 LINES
Lisbon Telephone Corp.

SUNBURY, NORTH CAROLINA, 100 LINES
Norfolk & Virginia Telephone Co.

SWANQUARTER, NORTH CAROLINA, 50 LINES
Carolina Telephone & Telegraph Co.

TEXARKANA, TEXAS, 5,400 LINES
Two States Telephone Co.

VANCEBORO, NORTH CAROLINA, 50 LINES
Carolina Telephone & Telegraph Co.

VERDON, NEBRASKA, 80 LINES
Southeast Nebraska Telephone Co.

WAKEFIELD, NORTH CAROLINA, 200 LINES
Carolina Telephone & Telegraph Co.

WHITAKERS, NORTH CAROLINA, 100 LINES
Carolina Telephone & Telegraph Co.

WELLSBORO, PENNSYLVANIA, 800 LINES
Tioga County Bell Telephone Co.

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Service and Financial Problems

Confronting the Industry

By
HON. LESTER R. HOOKER
Member of the
Virginia Corporation Commission

THE INDEPENDENT telephone business in the United States has made continuous and steady progress throughout the past until its combined business has now become a major utility business. According to TELEPHONE ENGINEER NEWS LETTER of August 6, 1948, at the close of business in 1947, the Independent telephone companies had an investment in plant of eight hundred fifty-one million dollars, their gross revenue for the same period amounted to two hundred forty-five million dollars, the industry had six million three hundred sixty thousand telephones in service and employed 87,000 persons. The investment in plant has no doubt been substantially increased since January 1, 1948, as well as has the number of telephones in use, which, of course, has increased the income and number of persons employed by the respective companies.

In the Midst of Trying Times

We are in the midst of the most trying and difficult times that the telephone industry has ever had confronting it. You are in the midst of a period when the demand for telephone service is greater than ever before experienced in the development of your business. It comes at a time when you are unable to meet such demand promptly, and to meet it adequately will be sometime in the future; too far in the future to satisfy many of those desiring telephones.

It is difficult for the public to understand fully your problems as they really exist. Those desiring service during the war appeared to understand the difficulties confronting the industry at that time, and were very patient, but today it is a different story. To them the war is over, and they are not easily convinced that the industry is exerting its best efforts to extend its service to them. They have their troubles in whatever business they are engaged, but do not comprehend very readily that the other fellow's troubles are as great as theirs.

HON. LESTER R. HOOKER, in address presented at USITA Convention, stressed fact that "good service cannot be maintained when rates are unreasonably low."

This is a problem that requires much energy, patience and diplomacy. The problem of the shortage of material, the delay in receiving it, and the difficulty of getting efficient labor are some of the important items which are handicapping the more rapid expansion of telephone service and should be clearly and diplomatically explained to the prospective telephone user who has in many instances been long delayed for service, and continues to have to wait. And then comes the further necessary explanation of what it is going to cost to obtain this service when it does become available.

Public Confidence A Valuable Asset

This is the most difficult task of all in most instances, and this is true, notwithstanding the fact that each dissatisfied person is fully cognizant of the high cost of all he buys or sells. These are some of the problems of the telephone business with which you are intimately familiar. These are problems of service to the public that are essential to the succesful operation of a utility. The confidence and respect of the public served is necessary. When a utility has lost the confidence of those it serves, it has lost one of its most valuable assets, and, unless such confidence is restored, its future will be most trying and unpleasant, if not in fact, a hazardous one. These are problems that must be encountered and to a reasonable degree at least solved.

These unprecedented demands of the post war period have made it impossible to promptly provide service to all who want it, and to give each potential subscriber the character of service desired. While the service at this time is not in all respects as good as it should be, and not up to the standard that the regulatory commissions would like for the service to be, however, we are aware that it is better than it has been in the past few years and should steadily improve as conditions which now burden the industry become better.

Not only is the service better than it was a few years ago, but the service is of much greater value to the user. The telephone subscribers today can reach many times as many telephones in their local exchange area as was possible in the not too far distant past. There has also been a substantial increase in the demand for the service. Today the telephone is indispensable to a large percentage of the people. The quantity of service, the quality of service and the value of service have all greatly increased along with the increase in business and social necessities of our present way of life.

Therefore, it behooves those who are in the telephone business to be ever alert and continue on their mettle at all times to strive to meet the public's reasonable needs in the future. This will require your best thought and the most careful planning for the future by the industry if it expects to furnish to the public the best possible service. The public expects the best. Its mind has been geared to that stance.

Telephone Industry Must Be Kept Financially Sound

This kind of service necessarily requires money, and it is essential that telephone companies keep their business in a sound financial condition if the public demands are to be adequately met. It is of paramount importance that the telephone industry be kept financially sound. This

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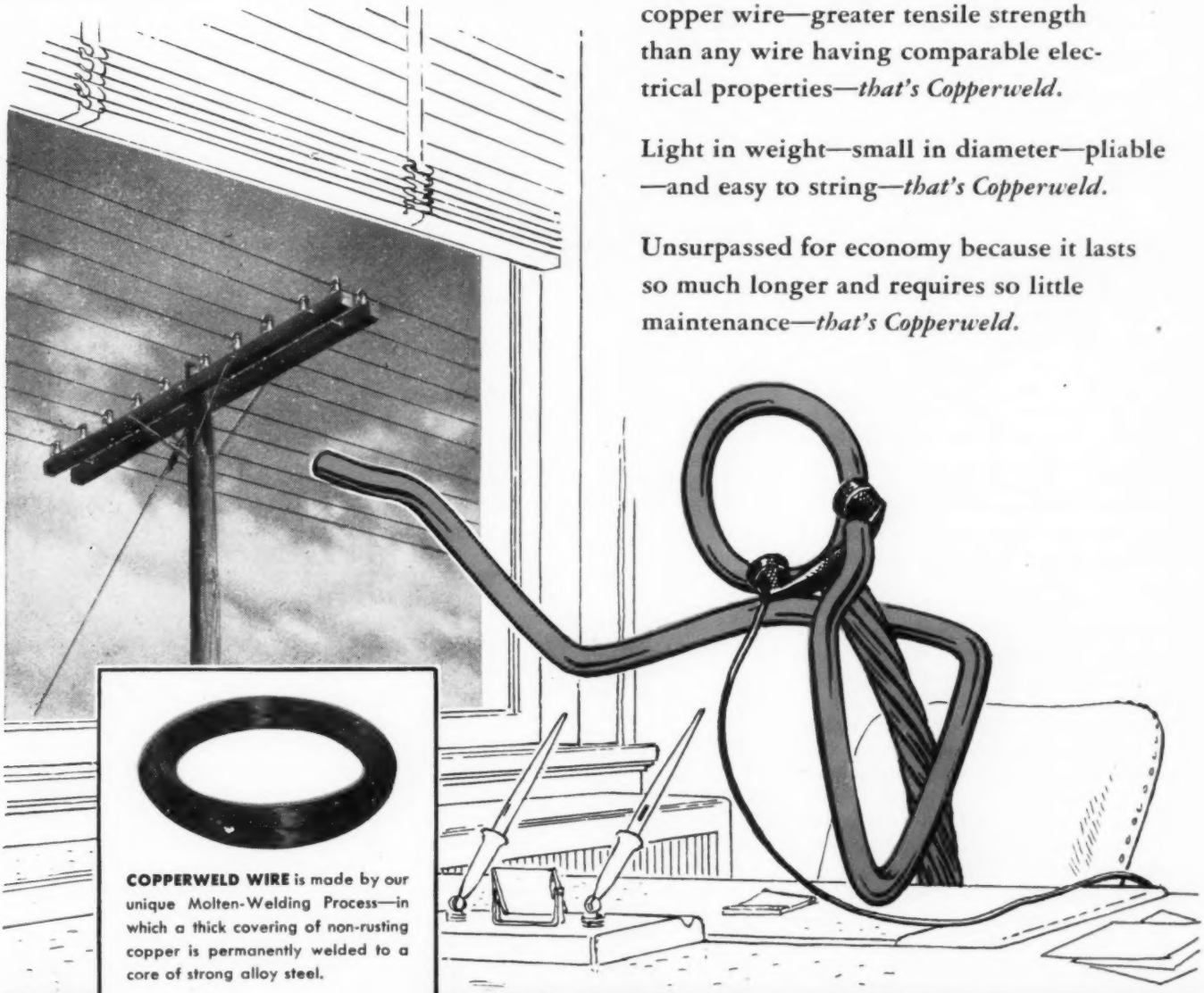
Light in weight—small in diameter—pliable—and easy to string—*that's Copperweld.*

Unsurpassed for economy because it lasts so much longer and requires so little maintenance—*that's Copperweld.*



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is essential for the progress of the business, and for the improvement and expansion of the service. These matters cannot be accomplished unless the financial integrity of the business be maintained.

The telephone plant must be soundly conceived with reference to the present and future needs of the service, the type of plant, the detail of design, and the plan of operation. It is necessary that there be strict economy in the cost of construction. It is of great importance that the plant and operations have an adequate capacity to reasonably meet the needs of the present and immediate future, with provision for economical expansion as conditions demand. This type of designing is necessary in order that the public receives the best possible service. It is also equally as essential that the undertaking be soundly financed, efficiently managed, and economically operated if the public is to obtain services at lowest possible cost.

Large Scale Financing Through Security Isues

You are familiar with the expansion program now being planned and carried on which must continue as rapidly as possible if the needs of the public are to be adequately served. This program will require large sums of money. A substantial amount of this capital will no doubt be raised by some method of financing. The sale of common stock under existing marketing conditions is expensive, and preferred stock issues are almost out of the question. This has given rise to large scale financing through the issuance of debt securities, with the debenture playing a very important role in the program. The debenture constituted 58% of the new money financing of the utilities during the first nine months of 1947, mortgage bonds 26%, preferred stock 6%, and common stock 10%, an aggregate of 84% in debt securities while 16% was raised in equity securities. We find ourselves in the unusual position of having substantial growth of an industry presenting serious financial problems.

Regulation Must Be Wisely Administered

Private business differs from public utility business in many ways. One of the outstanding differences being that those engaged in a private enterprise are privileged to take large risks. If the venture is unsuccessful, they bear the full loss. If it is successful, on the other hand, they may enjoy the profits and there is no ceiling on what either the losses or profits may be. Rates of a public utility business, however, are established upon the approval of some government agency. Risks are moderate and profits are restricted.

In the case of a non-regulated business greatly increased demands for its product, or service, will result in the necessity of securing additional capital, but it is not compelled to do so. It may expand its business, if and when, such expansion may be economically sound.

When a business becomes clothed with public interest to the extent that the government exercises its sovereign right of regulation, the operator or owner is no longer free to make whatever charges that may be desired, to serve only such customers he wishes, with a quality of service he may elect and at a time that may suit his convenience. One of the paramount elements of public utility regulation has been the control of charges for the services rendered, the governing principle being that the charges shall be fair and reasonable to the public and utility alike.

You know, of course, that the regulation of an industry that is monopolistic in character is a protection to the industry as well as to the public it serves if such regulation is fairly and wisely administered.

The value of the service being rendered by the telephone companies today is better recognized than it has ever been in the past. The needs for its expansion are to meet the demands of the public which are required to take care of their essential necessities of business relationships and social contacts. Not only has the subscriber demand for telephone service greatly increased, but moreover, the individual use made by the individual user is far more extensive today than at any time since the industry started.

As this manifestation for increased expansion of the telephone

(Please turn to page 86)

A Little Girl | Finds a Friend

WHEN AN OPERATOR plays a leading role in a life and death drama, it may be more spectacular than some of the "walk on parts" she acts from day to day. Nevertheless, she's helping to maintain—and even enhance—her reputation as a sort of "good fairy" when she thinks and acts quickly in an out-of-the-ordinary, though comparatively minor, situation.

For instance, a Cleveland newspaper reporter thought enough of one of the girls to write President Randolph Eide of the Ohio Bell:

"Dear Mr. Eide:

"In your line of work there must be a lot of complaints from impatient guys who think a telephone operator has nothing to do but sit around gabbing and knitting all day until she condescends to push the plug and give you the wrong number.

"This is a different kind of incident about one of your operators.

"There is a nice litle girl named Gayle, who is six and in the first grade at Parkview School in Bay Village. The other afternoon, when time came to go home, she had mislaid her coat. You know how six-year-olds are.

"By the time she found her coat, the school bus had pulled out and she was stranded at least two miles from home. Knowing nothing about pay telephones, she confidently took down the receiver and gave her home telephone number. But she suddenly felt terribly alone and helpless when the operator said, 'Five cents, please.'

"Gayle spoke into the mouthpiece, 'I haven't got any money. I missed the school bus, and I'm trying to call my mommy.'

"'That's all right, honey,' the operator said soothingly. 'I'll put the call through.' In no time Gayle's mother had picked her up and her little world was pretty good once again.

"It would have been an awfully long walk, and it was a cold afternoon.

Very truly yours,
Julian Griffen.

"P.S. I am sending you a nickel."

Reprinted From the Bell Telephone News.

Plant Conference Highlights

Latest Communication Developments

AN OVERFLOW audience attended the plant conference held on the first day of the USITA convention. G. W. Miller, Rochester, N. Y., presided at the conference and presented an outstanding group of industry speakers including Daniel S. Seitz, York, Pa.; Dr. J. A. Becker of the Bell Laboratories; Harold R. Hunkins of the Federal Telephone & Radio Corp., and C. H. McLean, consulting engineer of the Gary Group Operating Companies.

Plant Committee Report

Mr. Miller, in presenting the Plant Committee Report described a number of side activities of the Plant Committee, stating that the Independent Telephone Association is represented on the Correlating Committee on Cathodic Protection by the chairman of the Plant Committee and the Association's engineer, George C. Richert. This committee is composed of representatives of various organizations interested in the development of practical techniques that will economically control, retard or stop corrosion of underground plant.

"A subcommittee of the Plant Committee, the Standardization Subcommittee," Mr. Miller said, "was created by the association's board of directors at a meeting held in April 1947. The purpose of this subcommittee was to study and make recommendations with respect to the standardization of various items of equipment used by the Independent telephone industry. This group made a report to the April, 1948 meeting of the board of directors and in it, recommended the committee be discharged. The report described the difficulties encountered in the study of endeavoring to standardize on only one piece of equipment, when there are so many manufacturers, and so many items of equipment. The board of directors accepted the report and discharged the committee."

L. W. Hill, a member of the Plant Committee, has been the USITA representative on the American Standard Association's Sectional Committee on specifications for wood poles. This committee was composed of representatives of 21 national organizations concerned with the production or use of wood poles or with the technology involved in determining their relative strength and durability. Mr. Miller stated that the committee, which has been working on this problem for some years, has finished its work on the new specifications. The new American Standard Specifications and Dimensions for Wood Poles, 05.1-1948, are available at fifty cents each and can be obtained from The American Standard Association, Inc., 70 East 45th Street, New York, N. Y.

G. W. MILLER

Mr. Miller stated that the Plant Committee would like to emphasize "the importance of the correct design and size of new central office buildings."

"Many fine articles," he said, "have been written on the details of construction, etc.; however, a review of certain fundamentals might be very helpful. Always found to be worthwhile is the consulting with an architect or qualified building contractor on outside appearance, new building materials and construction practices —regardless of the size of the building.

"The size of the building should be carefully planned, because a dollar saved in the original construction may cost several, and a great deal of inconvenience, if subsequent equipment additions require a building addition. Therefore, it is important that adequate equipment space should be provided for anticipated growth. In localities where wide changes in temperature and moisture occur, consideration should also be given to the installation, operation and maintenance of adequate heating and ventilating systems, for both attended and unattended buildings. In many instances, a ventilator is sufficient for small buildings, while in larger buildings, a complete system is necessary. Where heating is necessary in small buildings, an electric heater has been found satisfactory. The amount of heat required in an unattended office is only that necessary to keep the inside of the building a few degrees above freezing, with provisions to increase the temperature if work is being performed in the building."

Preventive Maintenance

Mr. Seitz told the conference audience that every telephone plant, regardless of how well it is constructed, will inevitably require maintenance which may be divided into two parts: (1) Routine inspection and testing, replacing worn equipment, poles, etc. and (2) preventive, which means making changes and improvements designed to prevent the complete failure of any part of the plant.

"The costs and benefits of Routine Maintenance," he said, "are readily determined while preventive maintenance costs will be evident but the value of many of the benefits must be estimated, such as, less costs for repair force personnel. Uninterrupted service for the subscriber, good will, etc. Speaking of costs, one thing that inflation has not affected is—an ounce of prevention is still worth a pound of cure. Perhaps inflation makes prevention even more important than ever before."

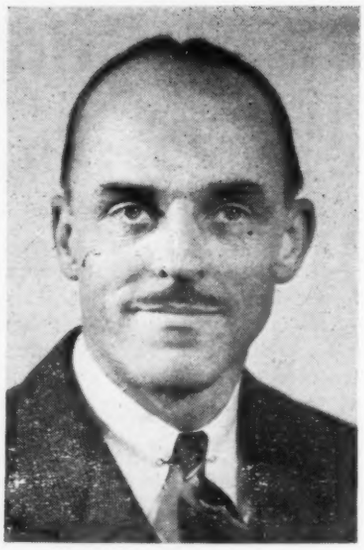
Discussing specific cases where preventive maintenance may be applied Mr. Seitz presented faults and remedies of subscribers' installation, aerial cable, underground plant and central office installations.

Discussing the cable terminal to which the open wires are connected Mr. Seitz stated that if it is a fuse type, "those fuses may be the source of much unnecessary interruption of service and expense due to lightning passing through them on the way to the ground and blowing them."

"If we connect a 20 or 22 gauge bridal wire from the open wire," he said, "to a protector unit equipped with discharge blocks that will ground

DAN SEITZ discussed "Preventive Maintenance" at the USITA Plant Conference.

DR. J. A. BECKER demonstrated the Transistor to members of the Plant Conference.



HAROLD HUNKINS brought the Plant Conference up to date on carrier.

solid when the telephone line comes in accidental contact with a power line thus causing the small gauge bridal wire to burn open, will eliminate the need for fuses at this point. The ground wire from the protector unit should be connected to the strand and sheath on aerial cables. Never use this method for protection at the subscriber station. It might result in a costly fire. However, on a pole this is not hazardous. Preventive maintenance is good insurance against having trouble later. . . ."

Following Mr. Seitz's address, Dr. J. A. Becker of the Bell Telephone Laboratories presented a technical demonstration of the Transistor.

Carrier Application

Discussing "The Application of Carrier To The Independent Telephone Plant," H. R. Hunkins, Systems Engineer, Federal Telephone & Radio Corp., stated that the last 35 years which have witnessed a remarkable increase in the use of telephone and telegraph communication has seen the introduction and widespread use of the science of electronics.

According in Mr. Hunkins carrier telephony has found its greatest application in providing additional toll circuits facilities over distances from 100 to 1000 miles. Equipment has ordinarily been provided to furnish one, three or 12 carrier telephone channels over a single pair of wires. Although most of the equipment offered for toll service has been rather expensive, it has still been possible to prove it in economically because of the relatively high cost of stringing additional wires to provide the equivalent services over these distances.

Describing the application of carrier in the extension of rural telephone lines, Mr. Hunkins said that with the introduction of cheaper carrier systems it is possible to conceive of a carrier system applied to a rural line which will jump out to the far end, pick up a new line at that point and thus permit the extension to new customers beyond the range of the original line.

Radio Telephony

C. H. McLean, manager Gary Foreign Operating Properties and consulting engineer, Gary Group Operating Companies, stated that for radio relay circuits now in commercial service, interim operation is in the 152-162 megacycle region and although these frequencies are satisfactory for immediate requirements, there is every indication that experience of the past will be repeated and the number of channels that will be available to serve future relay requirements will be inadequate even in the less populated areas.

"Independents," he said, "may be operating in the ultra and super high frequency regions in this country sooner than they suspect. It has been authoritively stated that there may be as many as 400 television broadcast stations on the air within a two-year period, covering 140 metropolitan areas and eventually serving around 39,000,000 homes. This anticipates extensive television relay facilities that, from present indications, will be provided by common carriers. In Independent areas, there will undoubtedly be a demand for inter-city and local television pick-up facilities and Independents will want to provide this service. It is already indicated that wide band microwave links will probably be the best means of providing this service. . . ."

Mr. McLean stated that Independents, are "somewhat slow in pushing urban and highway mobile service and rightly so due to the fact that an all-out effort is required to catch up with current telephone demands.

"Unfortunately, the mobile radiotelephone situation, for the present at least as far as Independents are concerned, is not compatible with common carrier petitions for increased channel assignments, although there is little doubt in my mind as to the ultimate need for additional assignments if our group experience is borne out. There is just one suggestion I have in this connection that may merit some consideration and protect the future to some extent. Instead of waiting for the day that an elaborate expensive system will prove in with some hope of at least breaking even from the standpoint of investment return, every Independent operator with three or even less vehicles operated by the Plant for maintenance, installation or construction work or other department usage for that matter should apply for an experimental license, contemplating initial experimental operation with your own vehicles and, consequently, not on a toll or hire basis.

"As an alternative, it might even be desirable for the U.S.I.T.A. to make the necessary representation to the FCC for Independents to be included in the industrial band of frequencies, along with electric, gas, water and steam public utilities now included in this band."—THE END

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Accounting Conference Covers

Management, Rates, and Machines

THE accounting conference, held on Monday, October 11 with H. C. White, Jamestown, N. Y., presiding, attracted a capacity audience that heard industry members discuss accounting department management fundamentals, use of modern machines and rate case exhibits.

What Management Expects

R. A. Phillips, president of the Central Telephone Co., Lincoln, Nebraska, during his discussion of "What Management Expects From The Accounting Department", urged accounting department members to maintain a patient and understanding attitude toward other departments. "There are a great many phases of your work and your problems," he said, "that are not too well understood by management people. Therefore, it behooves you to have a patient attitude when explaining and interpreting accounting procedure to other departments and the management . . ."

Mr. Phillips explained that accounting department work is very closely related to plant, traffic and commercial department activities, and that patience and understanding in dealing with other departments is of prime importance. "I have often seen," he said, "a tersely worded letter from the accounting department to field operating forces completely demoralize the effectiveness of operating personnel for days. . . . You must take care not to adopt an attitude that the other departments exist only for the accounting department. If anything, I would say the accounting department exists for the aid of other departments and as such is primarily expected to record and report all of the activities and results of the other departments. Depending on how you handle a few of these matters, you will make a contribution to the success or failure of the overall business venture."

Mr. Phillips said that the substance of the accounting department's duties has to do with facts accurately recorded and accurately interpreted. "The facts," he said, "should show the status of the business at all times and the effectiveness of the policies being pursued by management and the company personnel. Such facts, in addition to being accurate, should be presented on time; in sufficient time, in fact, so that they will be of some good. Facts, to be of any use, should be timely and intelligible . . ."

R. A. PHILLIPS, Lincoln, Neb., discussed "What Management Expects From the Accounting Department."

Dealing with the relationship of the accounting department with management, Mr. Phillips stated that the following items are of utmost importance: (1) Accounting department supervisors and managers should consider themselves fully as responsible as management itself for helping to create and bring about successful operating results, and, (2) the matter of centralization or decentralization in accounting procedures is an important factor and one worthy of a great deal of time and attention; one of the things that management expects from the department is a proper decision in regard to the most economical and efficient administrative organization for the performance of the accounting work.

In closing, Mr. Phillips stated that the accounting department should prove a fine training ground for individuals with outstanding personalities, acute appreciation for human relations, and perhaps even a mechanical bent. "The accounting department," he said, "is a source of real prospects for promotions into the overall management field."

Modern Machines In Accounting

O. M. Westrup, general auditor Illinois Consolidated Telephone Co., Mattoon, Ill., discussed some of the accounting methods and machines which are being used successfully in the telephone business.

"Any change in system," he said, "involves considerable thought and planning and unless the changes are carefully planned, dislocations are certain to be experienced. If the dislocations are to be avoided, the planning of system changes must necessarily receive the most careful study. Currently at least the time of personnel available for this assignment is being utilized by other activities. Projects such as rate cases and financial operations are important at the moment and are entitled to high priority. Needless to say, these duties draw heavily upon the time of the accounting department. The result is that our accountants have less time to devote to system changes."

Mr. Westrup stated, there are various operations to which machines may be adapted and in some cases different types of machines have been developed to perform the same function.

"It remains to be determined," he said, "just which operation should be converted from manual to machine and at the same time a decision must be reached as to the type of machine which can be expected to turn in the best performance. When such a conversion is contemplated, there are primarily two things which should be taken into account. First in importance undoubtedly involves a determination of the cost of performing the function by machine and a comparison of such cost with the actual cost of manual operation. Any such comparison assumes of course that manual operations have first been developed to the highest maximum point of efficiency. Secondly, there should be taken into consideration any improvements in the quality of the work resulting from machine operation, particularly as it relates

to the customer's appraisal of our service. Only with all phases of our operations geared to meet those tests can we be certain that the service which we provide will always measure up to the now familiar slogan which characterizes the telephone industry, "the best service at the lowest possible cost."

He emphasized that there are certain benefits to be derived from a program of mechanizing accounting operations and recommended that they be thoroughly investigated. "The reasons," he said, "are more or less obvious. First, of course, is the necessity of stabilizing the cost of operations in a period of rising labor costs. This can be accomplished only by reducing the amount of labor required and substituting in its place expense items of a fixed nature such as depreciation of equipment. Then, too, there are the benefits that normally accrue from doing a job better."

Machine methods, according to Mr. Westrup, have met with general acceptance in the telephone industry, particularly in its revenue accounting operations. The machine which appears to command the greatest interest at the moment in this particular field is the telephone billing machine. This machine prints the individual amount for local exchange service, directory advertising, other charges or credits, and balance on the regular telephone statement. Each amount is printed in quadruplicate on horizontal lines spaced to conform to the various sections of the bill.

In closing, Mr. Westrup described the rotational or cycle billing. Under this procedure, the accounts are divided into groups and a different billing date is assigned to each group. Each of the groups relate to a different period or cycle of time and any number of cycles may be established to cover a month's activity. Although the usual number of cycles is six, there may be more or less depending upon the work load, and the requirements of the business.

"For cycle billing," he said, "it can be said that it tends to eliminate peak loads by distributing the work more evenly throughout the month. Moreover, it facilitates a higher degree of specialization in employee assignments which, in turn, is calculated to increase productivity."

The final speaker, E. J. Ward, secretary of the Telephone Service Company of Ohio, discussed "Preparation of Accounting Exhibits for Refinancing and Rate Cases." An abstract of Mr. Ward's address appears in this issue.—THE END.

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Traffic Conference Emphasizes

Traffic Handling Standards

C. C. DONLEY, Lincoln, Neb., presided at the Traffic Conference on Monday afternoon and presented the Traffic Committee Report which showed that during the year the Traffic Committee's activities have been confined largely to the provision of information and advice on specific problems submitted to the Committee by the association members.

Mr. Donley stated that after consideration of the present status of mobile radio service and of the intertoll Dial developments it was the consensus that it would be wise to withhold issuing to the membership any detailed information on present operating practices affecting these services. A number of questions concerning the proper operating procedure on certain types of mobile service calls had been received and were answered by the question and answer panel portion of the Convention Traffic Conference Program.

At the Executive Conference this Spring the Traffic Committee's report included recommendations to traffic department's operating personnel. These recommendations had to do with Dial Central Office Equipment, Provision of CAX Toll Trunks, Voice Training, Sympathetic and Understanding Organization, Operator and Supervisor Training and PBX Operator Training Classes.

"These recommendations are continued," Mr. Donley said, "and, in addition, your Committee wishes to direct attention to the probability that, in many communities, a shortage of desirable applicants for operator positions will develop during the coming year. The especial desirability of reducing turnover at this time need not be urged here as this is generally recognized and understood by all operating supervisory people. Our notion today is that it may be prudent to build up a surplus of trained operators in anticipation of a difficult help situation.

The Traffic Conference presented an outstanding group of industry speakers, including Stuart H. Kelly, Omaha, Neb.; Mrs. Mary G. Hadlow, Erie, Pa.; George Rose, Tampa, Fla., and W. A. Kern, Rochester, N. Y. John F. Reding, Madison, Wis., served as moderator of the round table discussion on "Traffic Handling Standards." He was assisted by a panel composed of: Allen Crane, Portsmouth, Ohio; A. W. Pyrke, Erie, Pa.; Gordon Saunders, Owosso, Mich.; George Steele, Warsaw, Ind., and Eldon Burgess, Bellevue, Ohio.

C. C. DONLEY, Chairman of USITA Traffic Committee.

Abstracts of the papers presented by Mr. Kern and Mr. Kelly appear on pages 70 and 76 respectively. The paper discussed by Mr. Rose will be published in the November issue of FORTNIGHTLY TELEPHONE ENGINEER.

The Chief Operator

Mrs. Mary G. Hadlow, in her address before the Traffic Conference told her audience that in every office there is need for management to produce orderliness and efficiency of production.

"Production," she said, "in the telephone industry is the completion of telephone connections or calls. The common end to which the entire traffic department should work is the courteous, accurate, speedy and otherwise satisfactory handling of these calls. In meeting these objectives, orderliness and efficiency can be secured only when the work in an office is fully coordinated; therefore, some one employee is selected as chief operator to assume the responsibility for the satisfactory of the central office.

Mrs. Hadlow stated that in the selection of a chief operator, "*or the Heart of our business,*" there are certain qualifications which should be considered. Among the qualifications presented were the following:

(1) A chief operator must be a leader—she must have a natural liking for people because she must possess the ability to deal effectively with various types of people in order to bring out the best qualities in every individual employee and to find ways to produce successful group accomplishment through the cheerful and understanding cooperation of every employee.

(2) Team work is another name for cooperation which may be explained as meaning an association of ideas or purposes which generally enable people to work well together. For example: An employee's confidence in her supervisors and her fellow-workers and in herself; a loyal willingness to assume full responsibility for designated duties; a cheerful execution of all responsibilities, and an understanding of the Company's policies, plans and objectives.

(3) The chief operator must have a thorough knowledge of the work, operating practices and traffic matters in general. She is expected to keep herself fully informed regarding changes and modifications that from time to time may be put into effect.

(4) Judgment is a very necessary qualification as there are many occasions which require quick decision and action on the part of the chief operator.

(5) A certain amount of imagination is desirable in order to create a mental picture of opportunities for ideal job conditions.

(6) A chief operator must have the faculty of discerning and the frankness to acknowledge errors of personal judgment.

She should be capable of self appraisal, be able to know and acknowledge her weak spots.

(7) She must have the courage to

take reasonable risks and to handle problems with firmness and decision and not to be afraid of criticism.

(8) No human desire seems more insistent than the demand for fair treatment. Above all other things, employees will respect the chief operator for her willingness to do the just thing.

Mrs. Hadlow emphasized the fact that when properly combined the qualifications equal service—"the keynote of the Telephone business—which means that at all times an operator is eager to give the best possible service to the public and friendly cooperation to her fellow workers and her supervisors."—THE END.

Independent Pioneers Elect Carl Brorein President

THE INDEPENDENT Telephone Pioneer Association held its annual meeting October 12 at the Hotel Stevens, Chicago, in conjunction with the 51st annual convention of the United States Independent Telephone Association. Convening just prior to the closing of the Tuesday afternoon session of the USITA convention, the meeting was started off with a short business session presided over by Pioneer president R. C. Reno, Chicago.

Directors elected for three year terms were: V. E. Chaney, Chicago, Ill., and B. I. Noble, Lincoln, Neb. Carl D. Brorein, Tampa, Fla., and Mayme Workman, Springfield, Ill., were re-elected for three-year terms.

Officers elected were: Mr. Brorein, president; J. I. Kennedy, Freeport, Ill., vice president; R. A. Lumpkin, Mattoon, Ill., vice president; Mrs. Workman, executive secretary, and J. K. Johnston, Indianapolis, Ind., secretary.

Following the business session an entertainment program featured the 35-voice male chorus of the Illinois Bell Telephone Co. and a group of duets sung by Miss Meg Witherspoon and Elmer Carlquist, accompanied by Ernest Taminga, a member of the Male Chorus. The presentations of the male chorus and the individual artists received high praise from those attending the meeting.

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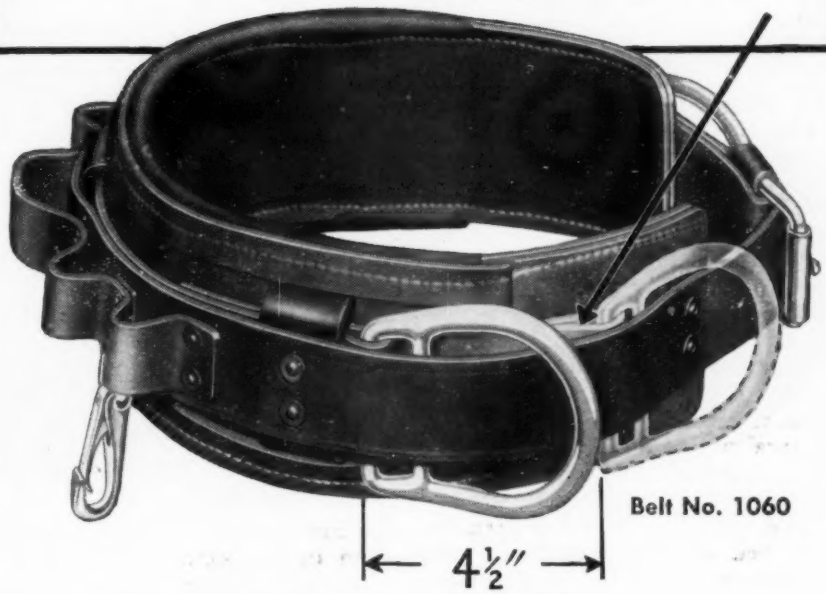

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Commercial Meeting Highlights

Employee-Employer Activities

AT THE Commercial Conference on Monday, October 12, R. B. Still, chairman of the commercial committee presented the committee report and presided at the conference. Mr. Still's report directed attention to certain of the committee's activities.

Mr. Still reported that the threat of Government Subsidized telephone service, such as now exists in the Electric Service through the Rural Electrification Administration, has by no means passed and it behooves all of us to carefully look after demands of rural people for service.

"A reasonable part of our growth," he said, "in subscribers' stations should come in the rural territory. The Bell System companies, and, we feel sure, many Independent companies are giving careful attention to this part of the demand upon us for expanded service. But many of us are not making reasonable effort to supply a very great part of the demand for farm line service. R.E.A. has lots of money to spend and could break loose again in an effort to get into the telephone business, and once it is in there's no telling where the injection will stop. We don't need it, don't want it and should take no chances, not absolutely unpreventable, upon letting it creep in.

"The dilapidated and weakened condition of some of the smaller Independent Companies has created a weak spot and a danger point. We urge that you watch carefully in your territory and do your part to avoid giving the R.E.A. a chance to make the start. This Committee's report at last Convention's Conference dwelt upon this subject and your Committee is still watching the situation—hence is again bringing it to your attention."

Officials and executives photographed in the Federal Telephone & Radio exhibit at recent USITA Convention; (L to R) Admiral E. W. Stone, L. J. Denney, Gen. W. H. Harrison and R. A. Gantt.

Public and Semi-Public Pay Stations

Mr. Still stated that the committee feels that one important phase of the business is that of Public and Semi-Public Pay Stations.

"A good source of revenue," he said, "is not being tapped and at the same time we are not placing our service within reach of the casual or non-subscriber user to the extent that we should. There is one Independent Company in Illinois which, from its few exchanges of sizes in which pay station telephones might be expected to get sufficient local call collections to be justified, was collecting, in 1935, about $2,000.00 per year, and which, by attention to properly locating pay stations and by locating subscribers' flat rate telephones where they are now within reach of the public, has, to 1947, increased this source of revenue to $22,000.00—in other words has increased that revenue by 1000%—a mighty good gain and at not too great a cost. This kind of an improvement cannot be made in our smaller exchanges, but we do consider that in those having 1500 or 2000 subscribers and upward, there is opportunity to get an increased revenue for a very reasonable additional investment and at the same time make our service of more value to our subscribers and place it within easier reach of our non-subscriber users of service."

Sales Technique

D. A. Kafka, general commercial superintendent Peninsular Telephone Co. Tampa, Fla., told the conference audience that the industry has a selling job to do which is unique. "Call it Selling in Reverse," he said, "or call it what you like, we must sell these people on the 'waiting list' the reasons for the delay in providing them with service. The reasons are many and each company knows its own problems. The underlying cause is of course inability to secure equipment and material fast enough and in sufficient quantity. They must be sold on the idea the company is doing everything possible to secure delivery of the material necessary to provide service. In order to tell the story properly and effectively a great deal of employee training and advertising must be done. Furthermore the company must back up the story with actual work in progress."

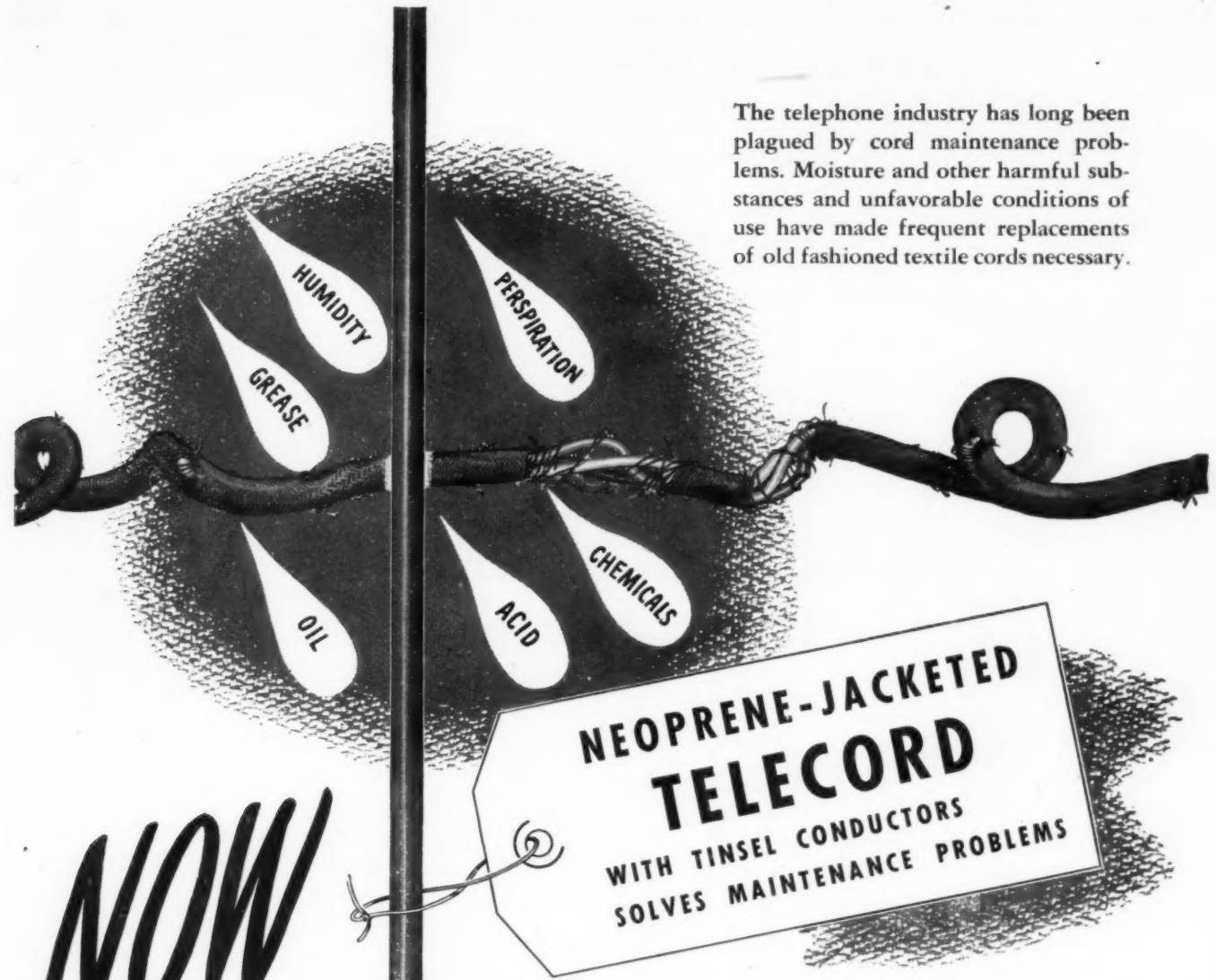
Employer-Employe Relations

Ray Dalton, vice president & general manager of the West Coast Telephone Company, Everett, Washington, told the conference that "Employer-Employee Relations" was never so vitally important as it is today in every American business or industrial activity."

"It seems," he said, "to suggest that in business and industry there are two groups of men arrayed against each other who must be continually at war. I cannot subscribe to that principle. However, a third party enters the picture of Employer-Employee Relations and that is the Labor Union which has been aided, assisted and abetted by some politicians for an extensive period of time. Generally speaking, the representatives of the union have the responsibility of securing those things which the employees desire but far greater than that they must be energetic in accomplishing the long-range program of the union they represent. They have usurped many of the prerogatives of management. Many of the politicians and labor leaders seem to have succeeded in driving a wedge between

(*Please turn to page 66*)

The telephone industry has long been plagued by cord maintenance problems. Moisture and other harmful substances and unfavorable conditions of use have made frequent replacements of old fashioned textile cords necessary.



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the employer and employee. They are striving for leadership and are offering many of the same things that were previously given by employers without being forced.

Mr. Dalton stated that there are two fundamentals which are paramount at this time. The first is to give the employee incentive and opportunity outside the realm of standardization and regimentation. Incentive and opportunity may be broken down into two parts. One pertains to pecuniary gain and the desire and opportunity to achieve craftmanship. These apply alike to employee and to employer. The second fundamental is that of education.

"I feel that this Association should lead the way to assist our member companies in this vital matter of employee education. I urge the formation of a strong United States Independent Telephone Association Committee charged with the task first, to study and then to promote, programs of employee education for our Independent companies large and small. Some time ago, our industry needed organized and effective advertising. This Association has been instrumental in persuading many of our companies to advertise intelligently. A similar task of employee-education now merits close attention."

H. F. Moran, general commercial superintendent of the General Telephone System, Central Group Madison, Wis., told the commercial conference that every year the telephone industry spends hundreds of thousands of dollars to improve and expand its telephone plant and services.

He stated that such an attitude toward the business should reflect constantly improved customer relations. "But at the same time," he said, "I feel that there are still altogether too many customers who think even less of us in spite of all that has been accomplished service-wise simply because somewhere along the line our exchange business office records have not been promptly maintained or that the need for such records may have been entirely ignored. It is unthinkable that any of us would knowingly permit, for the want of a written record, a misunderstanding to arise with any of our customers which might develop into a complaint to depreciate the effectiveness of the service improvements which have been made at great cost in effort, time, and money to promote and create, among other things, a more complete customer satisfaction with the telephone service we are providing."—THE END

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Frank S. Barnes Elected USITA President

(*Continued from page 40*)

of the nominating committee. President Burton announced that this committee would consist of the following members: W. H. Fowler, Roy Autry, Ray Dalton, Alden Hart and Ralph Van Trine.

Vice President Bohn presided at the second general session on Monday afternoon. For the second straight year Martin J. Kennelly, Mayor of Chicago, visited the USITA convention and commended the Independent telephone industry for the valuable part it is playing in maintaining the communication facilities of the United States. Mayor Kennelly was introduced by Mr. Bohn.

Executive vice president Clyde Bailey was the first speaker at the afternoon session. His discussion of "Your Association In Action" reviewed many of the organization's activities.

Your Association in Action

The report of Clyde S. Bailey, executive vice president of the USITA stated the association has continued to provide representation of the Independent viewpoint in connection with federal tax legislation. During the past several years the Tax Committee has made appearances before Congressional committees in support of elimination of telephone excise taxes and of moderating the burden of corporate taxation particularly as it concerns small companies. Conferences with members of Congress and with other public authorities in general have been held, letters have been written, briefs and statements have been filed. Member companies have been kept informed of developments and asked to lend cooperation whenever it has seemed desirable to invite it.

Mr. Bailey explained that the Association is "ever solicitous of the smaller units in our branch of the industry," and that the Board of Directors earlier this year created a Committee on Problems of Small Companies and charged it with the responsibility of studying these problems, offering advice whenever it can be done, and making recommendations for future action.

"The Committee," he said, "is not unmindful of the fact that many of the vexatious questions concerning the smaller companies are continuing ones and that study groups over the years have sought solutions. This however has not deterred the committee from going forward. It is entirely sympathetic with the plight of the owners of many of the small exchanges.

"This Committee has embarked upon several economic studies affecting certain small companies in the State of Indiana, which were chosen somewhat in the nature of test cases to determine whether it might be possible to evolve a pattern of recommended action. These studies were undertaken through the cooperation of the Indiana Association, the Indiana Bell Telephone Company, the Home Telephone and Telegraph Company of Fort Wayne and the Indiana Associated Telephone Company of Lafayette. It would be premature to attempt to evaluate the results of the studies at this time since members of the committee have not yet had sufficient opportunity to reach valid conclusions."

Following Mr. Bailey, Hon. Harry M. Miller, chairman of the Public Utilities Commission of Ohio discussed "Demands For Service And Regulatory Short Cuts." Mr. Miller's address is of value to every Independent telephone company, and, like the address delivered by Judge Hooker, was so well received by the convention audience that we are publishing an abstract of his address on page 47 of this issue. The address of John H. Agee on the subject "What Is Ahead On The Labor Relations Front" also contains a message of vital importance to Independent operating companies. An abstract of this address appears on page 51.

The final speaker at the Monday session was Earl J. Shreve, president of the United States Chamber of Commerce.

Commenting that only a start has been made in the tasks of repairing the economic losses of World War II . . . and strengthening the West in its struggle for freedom, Mr. Shreve said that "Years of hard work . . . of saving and sacrifice . . . will be required to carry out

these tasks of recovery and new growth."

"In this work," he said, "American enterprise has a dynamic role of leadership in technology, research, capital investment, the removal of barriers to trade and economic development. For this work, business enterprise wants freedom and equality of opportunity . . . incentives to take risks . . . encouragement from government . . . support from the American people . . . cooperation from labor unions . . . the understanding of those who guide the currents of public opinion."

Stating that business enterprise is America, Mr. Shreve said that the welfare of all the American people depends upon business . . . and more and more people are beginning to understand the common welfare that comes from business.

Vice President Harold V. Bozell presided at the final session on Wednesday, October 13. The first speaker introduced by Mr. Bozell, Fred E. Norris, chairman of USITA's Radio Service Committee discussed the growing role of radio in relation to telephone operations and service in two forms—mobile radio telephone service and television. *The address of Mr. Norris will appear in the October FORTNIGHTLY TELEPHONE ENGINEER.*

The two interesting technical demonstrations at the USITA sessions were staged by the Bell System. One of the expositions was of the Bell Telephone Laboratories' Transistor at the Oct. 11 Plant Conference which was presented by Dr. J. A. Becker of the Laboratories and, just as it has impressed scientists the transistor also impressed the convention audience.

With threatening war clouds overhanging the United States a broad outline of essential and significant part of telephone communications, was presented to a closely attentive audience at the Wednesday session by Herbert J. Schroll, Communications Advisor in Civil Defense. *An abstract of Mr. Schroll's address appears on page* 44.

Following the election of directors the 51st annual convention of the United States Independent Telephone Association was adjourned. Looking back upon its activities and reviewing the many addresses and the favorable comments, it is apparent that the convention gave the industry plenty to think about and put the spotlight on problems that must be solved. This as we said in our editorial, in this issue "is the first stage toward solution."—THE END.

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Traffic Department's Part In *Large Exchange Conversions*

By
WILLIAM A. KERN
Rochester (N. Y.) Telephone Corp.

THE traffic's part in a large dial conversion is fundamentally no different from its part in a small one. A large exchange is just a grown up small exchange. A parent bringing up a small child has the same and possibly more responsibility than the parent bringing up an older one. The parent in each case must study and know the child if he is to be given a bringing up which will make a responsible, useful adult.

The traffic department should familiarize itself with the people of the community the new dial exchange is to serve; know present telephone habits and be able to estimate with accuracy what those habits will be in the future. The commercial department can be depended upon to give estimates of future growth in the number of telephones, but upon traffic rests the responsibility to translate this growth into the fundamental data upon which our dial office will be engineered. By fundamental data I refer to the number of calls each line will originate in the busy hour and the holding time on each of these calls. When this data is translated into 100-second calls or two-minute calls, then we are in a position to calculate the number of line finders and selectors which our new exchange will require.

Fundamental Traffic Data

Great care should be exercised in the taking of fundamental traffic data. In our company, we feel we have removed the guesswork and the labor to a large degree from the assembling of this data. About two years ago, we purchased a mechanical or robot recorder. It is only necessary to connect the line or lines from which the data is to be secured, to this machine, flip a switch and the number of minutes the observed lines are in use is automatically recorded on a series of registers. The particular recorder which our company has, will scan up to 200 lines at one time. It is apparent that in a relatively short period we traffic people can obtain reliable fundamental data for any exchange regardless of size.

WILLIAM A. KERN, vice-president Rochester (N. Y.) Tel. Corp.

Once the traffic department has the fundamental data, the remaining task in engineering the dial office involves only the detail of converting it into equipment qualities such as links or line finders, selectors or connectors, trunks, etc.

Good traffic data on the various classes of telephones in the exchange will prove invaluable in line loading for the office. A good line loading job in the line finder and final selector groups is absolutely essential if the new dial office is to function properly. Here again the traffic engineer must know the number of calls minutes or seconds that each line in each group will originate or receive during the busy hour in order to spread his originating and terminating traffic evenly over the entire machine.

Each finder and final group in the office should contain a representative split of the classes of telephones in the exchange. A further breakdown of these two general classes of service (business and residential telephone) is desirable if your equipment does not require the segregation of party lines and P.B.X. lines into specific final groups. The problem of loading is a meticulous one and the larger the dial office, the more meticulous the traffic engineer must be, particularly in these days when spare equipment is non-existant, even in brand new dial offices. A poorly loaded small dial office can be very irritating but a poorly loaded large dial office will be a catastrophe.

Training Employees

After our large dial office has been engineered the remaining part of the traffic job involves the training and education of all traffic employees in the art of operating a dial exchange. P.B.X. operators must be thoroughly trained to operate their boards on a dial basis.

In Rochester, we accomplished this through our P.B.X. instructors. Two booklets were prepared, giving detailed instructions for the operation of cord and cordless types of boards. Numerous pictures of the face equipment of the boards showed position of the keys or cords for completion of various types of calls. Each P.B.X. operator was given a copy of this booklet when she visited our P.B.X. school to receive her dial instruction. In the school she was seated at the type of P.B.X. board she was accustomed to operate. This board was already converted to dial and connected with the dial machine. We spent a half-hour with each girl, first explaining the equipment, letting her listen for dial tone, ringing, out of order, and vacant level tones, etc. The remaining time was spent in allowing her to dial up as many numbers as time permitted.

A month later (just two weeks before cutover) we visited each of the P.B.X.'s involved and again reviewed with the attendants, the lessons learned on their previous visit. Two days before cutover, we called each P.B.X. by telephone to see if any 11th-hour assistance could be rendered.

In the dial instruction of other customers, traffic plays an important part but from behind the scenes. The commercial department plays the lead but it lends an attentive ear

to any suggestions on the part of traffic.

It is impossible to single out any of the miriad of traffic's functions having to do with the conversion of a large office from manual to dial operation and designate it as the most important function. They are all important and must be performed correctly or the final product will be something less than desirable.

Pre-Cutover Training Of Employees

I will say, however, that the biggest, most trying task, the one that gave traffic supervisors in Rochester the biggest headache was the training of 1000 operators and supervisors. This gave us a good sized headache because no operating force today has any slack in it. As a result most training was done on an overtime basis. By that I don't mean that an operator would receive her training after a hard day at the office, but rather that someone had to be brought in on an overtime basis to fill in behind the girl who had gone to the dial school.

Our first task in the training was to train those who were to do the training. No one in Rochester was equipped to do this. Fortunately, our good friends in the New York Telephone Co. had anticipated our needs and issued an invitation to send our key people to them for training at Buffalo. Six people were selected to receive this training.

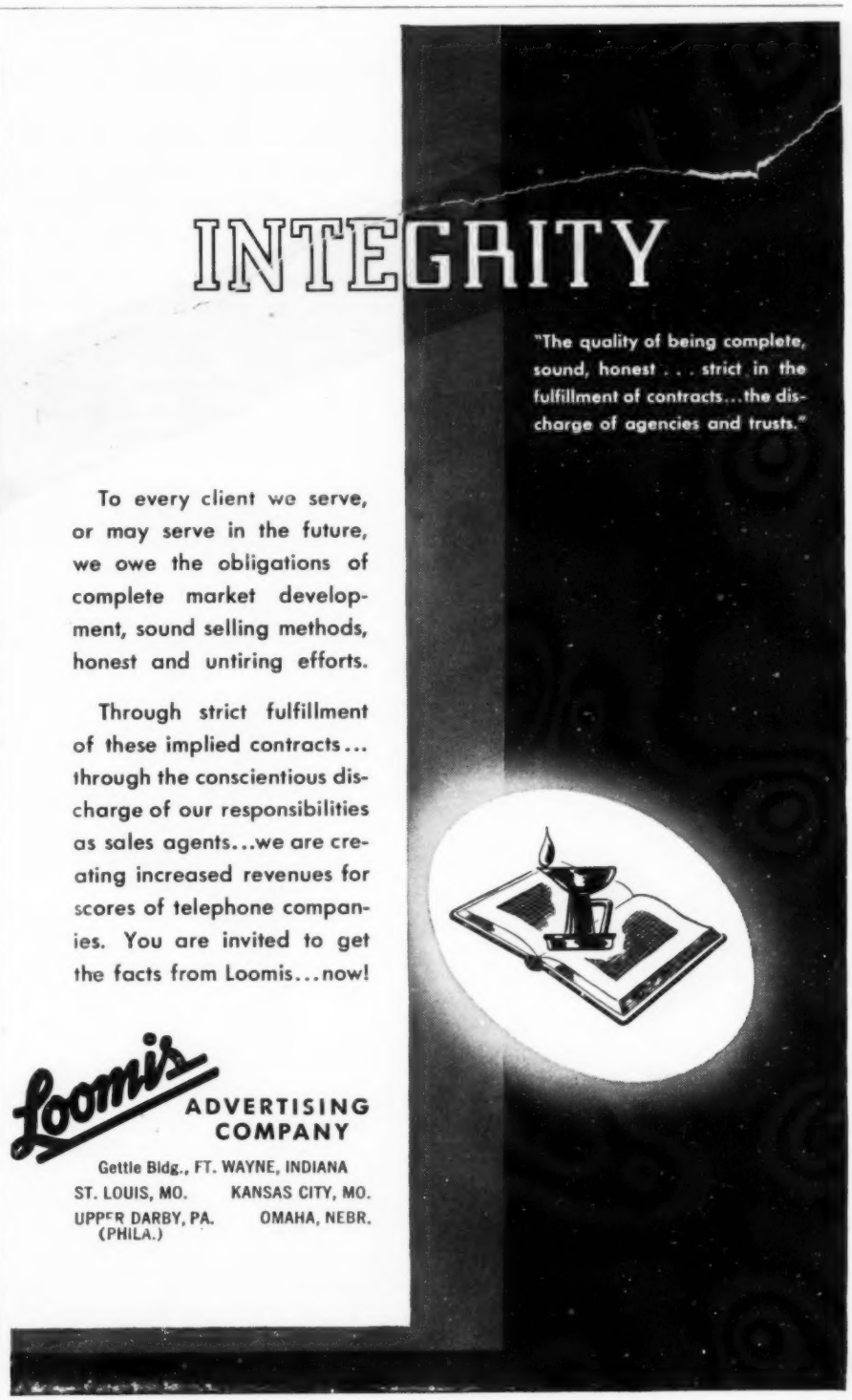
These instructors spent about six weeks in Buffalo absorbing as much as they could about Dial "A" Board operation. Training girls to operate "Call Indicator B Positions" and the key sets on the "A" positions seemed simple enough to handle ourselves without asking outside help.

All dial "A" board training was done right at the new switchboard. The board was wired for training purposes by the supplier, to our specifications. Everything possible was done to simulate the conditions which would obtain at cutover. We were particularly fortunate that a large section of the dial machine was ready for operation two months before cutover. This enabled our instructors to throw in calls and observe how their students handled the various types of calls.

Seventy-five girls, selected mainly from the offices replaced by dial, were given the full training course which took four days to complete. A two day course was given each girl. At the end of the two days she was given a text book so that she could keep fresh in her mind the various phrases she was to use. Two weeks later she was brought back for another day's review and as close to cutover as possible, she was given another full day's review. Those who were slow to grasp the work were given more instruction time and it was seen that every operator was thoroughly indoctrinated before cutover.

The job of training Call Indicator operators and "A" board operators was done in the several manual offices. Test calls were delivered from and to the dial machine for a period of six weeks prior to cutover. By the time of cutover, the operation of these facilities was an old story to our manual operators and they proved it by operating like veterans during the days immediately following cutover.

The thousands of hours which were spent in training proved to have been money well spent because no equipment tieups were in evidence because of faulty or slow operation by our traffic operating forces.—*(Abstract of paper presented at the U S I T A Convention.)*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The Defense Role of Communications

(Continued from page 44)

centers of communications for the receipt and transmittal of air raid warning and other information, for the initiation of action, direction and control of Civil Defense operations during an emergency. Communications will be vital to facilitate quick appraisal of the extent of destruction, the type of attack—wehther high explosive, atomic, chemical or other type: also for communicating with other points in order that organized assistance may be promptly dispatched, directed and control instituted.

It is important that primary and also alternate control centers, when provided, be located with due regard to the ready availability of wire communications facilities, security and dependability of services from the viewpoint of alternate routing of connecting lines and with capabilities of rapid expansion of the services.

Local telephone company representatives can be helpful to Civil Defense authorities responsible for the selection of locations of control centers and the determination of the communications arrangements, and it has been proposed that their services be solicited.

Effective police and fire communications will be essential.

Mobile radio-telephone and walkie-talkie facilities must be anticipated for ground reconnaissance following atomic or gas attack and for search and rescue work.

Adequate telephone facilities are the foundation of good police and fire department communications in addition to radio-telephone facilities which may be provided. It is proposed that a traffic study be made jointly with the local telephone company to insure that proper operating procedures are adhered to and that sufficient spare capacity exists in the equipment to permit the installation of additional telephones and trunk lines where needed in anticipation of sudden large increase in usage.

The extensive and dependable communications required for civil defense will necessitate to a large extent the provision of facilities and services by the common carrier communications companies as well as the use of the existing communications facilities of the police, fire, and other services.

It is proposed that in so far as practicable standard telephone and other equipment be used to avoid delays in procurement and installation of equipment, and the need of special training in operational procedures, and to obviate problems in the maintenance of facilities.

The best defense system that could be devised would fail if its communications system did not function and particularly, if it suffered major failures in the time of extreme emergency.

In wartime, however, communications may be severely damaged in areas subjected to heavy attack. Therefore, every contingency must be provided for and sound plans developed so that in such an emergency communications in some form will be available.

Perhaps I may be anticipating your thoughts by stating that in the event heavy damage has been inflicted on communications in a community, the alternate geographic routes and general diversity of the facilities, flexibility of the networks inherent in the design and construction of common carrier communications systems, give some assurance of portions of the communciations facilities remaining in service.

Emergency communications may also be rapidly established through the use of mobile radio-telephone facilities.

The planned availability of emergency repair forces and supplies within the cities and adjacent cities, plus the traditional resourcefulness and ingenuity of the industry, should contribute effectively in the maintenance of communications services.

However, the means of assuring the availability of communications under various emergency situations is a most important one when considered in the light of a possible devastating attack and the resulting wide-spread destruction of facilities. This is a matter which sould concern the communications companies and receive their careful consideration.

(Abstract of address presented at the 1948 USITA Convention.)

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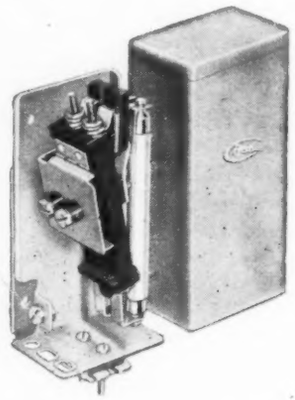

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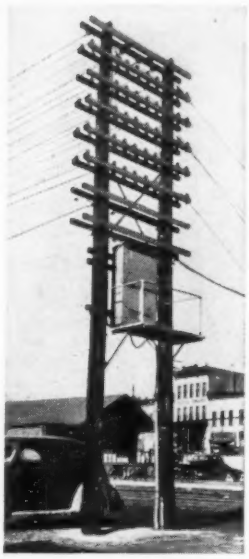

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Preparation Of Accounting Exhibits For

Refinancing And Rate Cases

By
E. J. WARD

**Secretary-Treasurer,
The Telephone Service Co. of Ohio,
Lima, Ohio**

IN SPEAKING on this subject I desire to confine my remarks to that phase of the problem that is usually faced by the smaller companies of our industry. The larger companies through their frequent contacts with this problem are entirely familiar with the required procedure. For the smaller company, however, the job of preparing these exhibits may seem to be a well-nigh impossible task. In many such instances the Accounting Department of the company may consist of only one person, often the manager or his wife keeps the books of the company. To them the subject of *Refinancing* or *Rate Making* is appalling in the aspect of the accounting data required. Because of this feeling, born of inexperience and unfamiliarity, these companies many times put off or postpone indefinitely the job of making their telephone company a sound business enterprise that is geared to do business in a modern world.

It is difficult to discuss this subject technically at a convention to which have come delegates from all of the 48 states. The requirements of the regulatory bodies of these several states are not necessarily uniform. For example, in some states the *Original Cost* of the property is the basis for the consideration of new rates while in other states the *Reproductive Cost new less observed depreciation* forms the rate base. Some states may require detailed appraisal while in others a statement of valuation prepared by a competent engineer may suffice.

Associations Will Help

In any proceedings involving either refinancing or adjustment of rates the manager of the small telephone company should first seek out the executive head of the Telephone Association of his state. An hour or two spent in conference with this capable individual can prove to be a very valuable investment. The experience of the State Association Executive will be valuable in

E. J. WARD

determining the course of procedure to be followed in the refinancing or in the rate case.

The next step should be to arrange for a conference with the head of the Regulatory Commission of your state. If possible, this conference should be arranged so that the State Association Executive can also attend. The manager of the telephone company should lay before the Commission Chairman the full details of his problem, keeping in mind that the Regulatory Commission is just as much interested in the sound business health of the telephone company as they are concerned with the public being furnished an adequate service at a reasonable rate.

Perhaps the problem of the Telephone Manager is one that involves the issuing of stocks to provide for maturing bonds or the reverse situation may obtain where the company desires to issue bonds for the purpose of calling a certain class of stock. Yet again the problem may be one of providing funds with which to make needed plant improvements.

This latter problem is one that is presenting itself in increasing importance for the attention of the telephone manager. Telephone plants must grow to meet the demands for more and more service which the public insists upon receiving. Here the accounting Department, whether it be the company bookkeeper or a fully developed arm of the telephone company organization can and must play an important part if our industry is to meet the challenge of the times.

Most telephone companies make their expansions first and then seek to finance the improvements. The temporary financing is generally provided out of the company's own treasury, representing the amount of earnings reserved for a depreciation provision and hence not available as dividends on the Company's outstanding stock. This source of cash is usually soon exhausted and is often supplemented by short term loans from banks. In any event there soon comes the time when the Company must refinance these improvements to its plant. This process is known as Capitalizing Net Additions.

Keeping in mind the admonition set out above of having a heart-to-heart talk with your Association and your Regulatory Commission you will then learn the necessary steps to be taken in refinancing these expenditures. In most states the requirements are quite simple. A formal application is drawn asking the Regulatory Commission to approve the permanent capitalization of the expenditures that have been made. To this application is attached an exhibit showing the amount of net additions that have been made by the company. This exhibit should be prepared to show these net additions by years for the period covered by the application. It is just as simple as that. Of course the exhibit must be based on the actual additions and retirements that have been made in the several plant accounts for the period under review. Good Plant Accounting is a prerequisite for the proper preparation of this exhibit.

After the application for capitalizing net additions has been properly filed then follows a period of investigation by the accountants or engineers of the Regulatory Commission. After the investigation by the representatives of the Regulatory Commission an order is issued authorizing the capitalization of such amounts as are found to be in order for the purpurpose of reimbursing the company's treasury for expenditures previously made in the course of expanding the plant and property of the company.

Now comes the problem of determining how this capitalization should be done. Generally the Regulatory Commission retains jurisdiction of the case until such time as the telephone company determines what type of securities it desires to issue. The final order of the commission will then authorize the type of securities that it is indicated are in the best interests of the company to be issued.

Markets For Securities

The telephone company must now find a market for these securities. This market may be either to the public which may or may not include existing security holders or it may be a matter of selling the securities to a financial institution. The latter course is generally followed where the securities to be issued are in the form of bonds.

In preparing the market for the securities it will be necessary for the accountants of the telephone company to set up Pro Forma Income Statements showing what would have been the experience of the company during prior periods of its operation had the proposed financing been in effect. Preparation of these exhibits is simply a matter of making a copy of the previously prepared Income Statements and giving effect to the amount that would be required to pay the interest or dividends on the new securities. These comparative statements are usually for the previous five-year period. It is generally advisable to also reconstruct the Balance Sheet to show the inclusion of these proposed new securities. Sometimes it is necessary to prepare supplement data in addition to the financial statements required. Frequently asked for is an exhibit to show the growth in the number of stations served by the company over the past several years. Exhibits showing the proposed plan of future expansion of the plant and property of the company are also often helpful in interesting prospecive purchasers in the securities of the company.

The exhibits required in Rate Case proceedings are also comparatively simple and easy of preparation if the requirements of the Regulatory body are first ascertained and the exhibits compiled in accordance with these requirements. Those exhibits generally required are cataloged as follows:

(1.) *VALUATION STATEMENT*—As has been stated above some statement of valuation either in the form of an engineering opinion, a detailed appraisal or a statement showing the original cost of property by accounts and brought up to date certain of the Rate Case must form the initial exhibit of any Rate Case application.

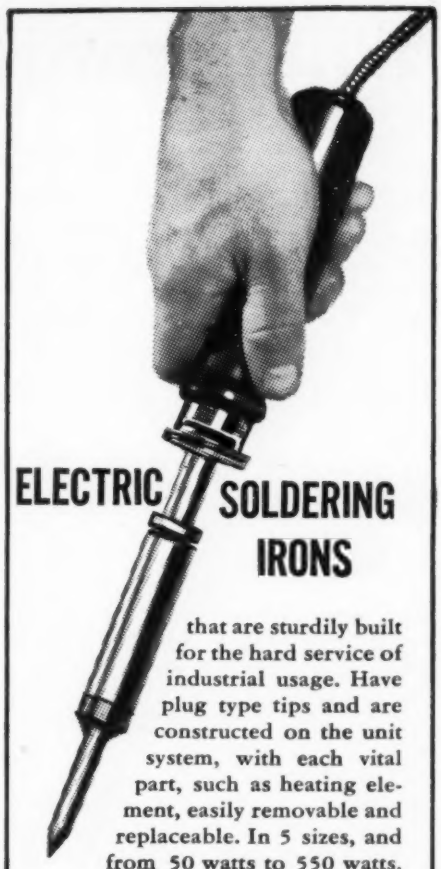
(2.) *INCOME STATEMENT*—An Income Statement for the latest twelve months available showing the amount of Earnings available for rate of return based on the company's present income.

(3.) *RATE STUDY*—Next should be prepared an exhibit which is commonly called a Rate Study. This is compiled by multiplying the existing number of stations of each class of service by both the present and the proposed monthly rate. The difference between the total monthly revenue produced by these two computations is then projected to an annual basis. This then becomes the amount of estimated increased gross revenues to be expected if the new rates are allowed and put into effect.

(4.) *ADJUSTED INCOME STATEMENT*—The company's Income Statement above is then adjusted to show the amount of the proposed increased gross revenue. This Income Statement must be further adjusted to show the additional provision for uncollectible accounts, increase in various taxes that are computed on the company's revenue, together with adjustments that may be required in order to properly allow for extra ordinary expenses in connection with the Rate Case. The result of applying the above mentioned adjustments produces an adjusted Income Statement for the most recent twelve months operation of the company and giving effect to the proposed increase in rates.

(5.) *RATE OF RETURN*—By dividing the adjusted Net Income thus shown by the rate base of the company as determined from the exhibit of Plant Valuation it is possible to determine what the rate of return would be if the new rates are to be granted.

All companies, both large and small should re-examine their financial structure and rate schedules. There is no phase of the telephone business that at the present time can be of greater importance to the company than the carrying out of the necessary refinancing and the securing of adequate rates for its service. We have an obligation to continue to furnish telephone service in the community in which we operate. The public is interested in having its telephone company in such sound financial condition that we can continue to do our job well.—(*Abstract of address presented at the* 1948 *USITA Convention.*)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What Traffic Management Produces

By
STUART H. KELLY

**Traffic Operations Supervisor,
Northwestern Bell Tel. Co., Omaha, Neb.**

STUART H. KELLY

WE DEAL with many things. But mostly we deal with people—the splendid people who operate our switchboards so helpfully and so courteously that the whole United States looks to them as the watchword of the friendly voice. And finally there are the people we serve—the public of our nation whose calls we weave together to unite a hamlet or a village or a city or a nation into one composite society ready to exchange information about its markets and materials, its prices and provender, its hopes and fears, its despairs and delights. So to talk about traffic work, we might consider it in three ways: What do we produce? . . . How do we produce? . . .Who produces?

We can answer the first question very quickly. We must all agree that we produce or manufacture just one thing—that which is the primary value the telephone Company has for sale—the completed call. That is the end product—the completed call—but with it goes a wealth of tone and quality in the way it is produced—the friendly, capable, interested, personalized attitude of the operator handling the call. All the rest of our work is only the rehearsal for the main show. Back of the completed call comes the construction of the plant; the induction of the customer through sales, installation of his telephone, working the order through all the records; hiring, orienting and training all the employees in all departments. And it all builds up to the completed call—the conversation.

Uncompleted Calls

Now what about the uncompleted call? And here we come to how we produce. Is it just a matter of a friendly voice saying, "The line is busy" or "I'm sorry, but they don't answer?" No, it's more than that.

Today we handle four requests of a customer for our product for every three times that we produce a conversation on a call for another telephone in the same town or local calling area. Less than 15 years ago, out of every six requests from customers we would produce five local calls. Production is down from five out of six to three out of four. Why? Well, busies are up substantially and that is only to be expected when, as we well know, central office equipment and cable are short and facilities are pressed into the utmost service they can render—a 4-party line is just bound to give more busies than a 1-party line.

However, let's not overlook opportunities for regrading where conditions permit. Calls abandoned are about the same as they used to be, indicating the same type of usage by customers who quickly realize they have called a wrong number or didn't want to talk in the first place. But "don't answers" are way up—half again as high as they were in the early post-depression days.

Analyze lost calls because of don't answers and we find something to worry about in the whole telephone factory. We find plant installation at fault with telephones located in remote and inaccessible parts of the home or place of business where rings will not be heard or answer time will be protracted, and a quiet, timely suggestion by the installer might have resulted in a good location because the customer knows the installer is an expert. We find places where a loud gong should be recommended. And there are handicapped customers by reason of deafness or other infirmity, whose installations should be tailored to their needs.

Look next to maintenance and especially the per cent trouble not found on "bells do not ring" reports. How many calls were lost before a customer reports his bell does not ring? Dial no-ring conditions also should be promptly reported to the Plant Department.

Incidentally, when we look at "don't answers" by kind of telephones, it is a striking fact that almost twice as high a ratio of "DA's" occur on residence lines as on business lines. Last year DA reports on calls to business lines caused about seven lost calls out of every hundred offered, but on residence telephones, 12 to 13 calls were lost out of every hundred because of DA. Some customers lost a lot of business and we telephone people failed to produce on a lot of chances offered.

Maybe the calling party is too impatient. If so, we had better ask our advertising people to talk more about the good old Golden Rule of waiting as long for your party to answer as you would want him to wait for you. We find there is a lot of gold to be mined out of that Golden Rule, too, when we look over the customer's shoulder and discover that, if we would wait just a little longer, he would get his answer once out of every seven times that he now hangs up.

On the average, the calling party now waits 26 seconds. To get his answer on the seventh call, he would only have to wait one minute or for automatic ringing it would mean waiting for some 10 rings—about twice as long as he now waits.

Customer Instruction

Good customer instruction in the use of manual and dial service is important to completion, just as is sound and constructive PBX instruction. Surveys and analyses by sales people and PBX instructors may also bring to light PBX bottlenecks to completion, such as inexperienced or over-loaded PBX operators; overloaded boards or trunk facilities in firms that have grown large in the last ten years but let their telephone service fall behind. But we need to do more than look at the plant, sales and advertising folks in this local completion. We have to look at ourselves.

How are we doing in the operating room on such things as initial rings where code ringing is concerned and on all kinds of subsequent ringing? We are probably not so good as we should be. Actually, in our "not so

good offices" we fail to ring again as quickly as we should more than a third of the time. Moreover, if there is anything wrong with the central office equipment, we might as well not ring at all or, if through poor board markings or careless and inattentive operating, the wrong station is rung, then three customers may suffer; the calling party, the wrong party reached, and the proper called party.

Use of correct ringing keys without fail and proper manual ringing with alertness to properly timed and accurate subsequent ringing require good initial training, judicious retraining and constant alertness of central office supervision to convey to the operators at the board a consciousness of the importnace of correct ringing. Rings of proper duration avoid the later need for unnecessary subsequent attempts, thus pleasing our customers and reducing unproductive operating work.

Completion of Calls

Completion of calls is one of the many aspects of our business that can only be solved by the hearty cooperation of all of us, installers, salesmen, and operators—all of us aiming at delivering the one thing we sell, namely, conversations.

Little things often promote a completed call. We might consider a few examples. First we can be sure that whatever improvement is made in local completion will also be reflected in better toll completion. Then there is the matter of phrases. A few weeks ago, I noticed an item pointing out the obvious difference between a PBX operator saying, "Who is calling?" (and how many of us have hung up rather than answer such an irritating question?) and the same girl saying, "May I tell your party who is calling?" One phrase is a red flag because it humiliates the calling party. The other phrase boosts his confidence in his own importance.

Having considered the question of what we produce and how we produce it, let us turn our attention to who produces—the people who do the job. They are the operators who individually turn out the finished product and, when they fail in their objective, the reason therefore may lie within or beyond their control.

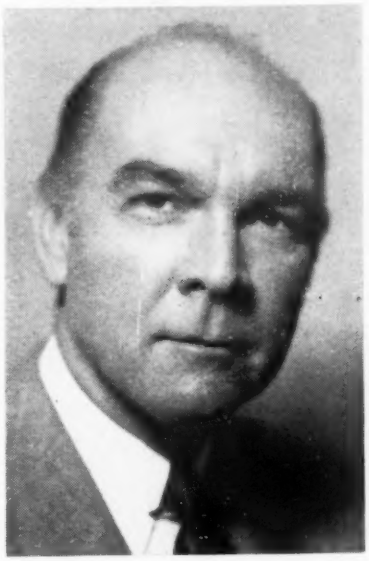
Anywhere else in our business the natural reaction of a customer to good service—his word of praise—can be readily delivered in person whether it be at the order desk or while the installer or repairman is doing his job in a neat and friendly way or a construction crew is working with an alert eye for protecting the public from hazards on the highways; wherever the public sees us doing a good job, there is an opportunity for a word of kindly comment. Rarely is this the case for the operator who is responsible for delivering our product hundreds of times every day.

This is a challenge to management and, being conscious of it, we can meet it in several ways. First, by cultivating in ourselves and our associates an alertness to the good futures of the operator's job, the extra courtesy, the personal touch, her resourcefulness in following up a call and by developing an unfailing habit of commenting favorably at a moment while the operator is on the line—it won't slow up your call in the least. Second, by developing in our central office management an atmosphere of approval and encouragement, a feeling of responsibility for saying some of the good things customers would like to say if they knew when and how to say them. After all, the expressed approval of one's immediate boss brings deeper satisfaction and greater inspiration than any other commendation. Third, by talking and thinking and living in the office, in our advertising, in our public utterances, and in our personal contacts with the operating. —(*Abstract of paper presented at the* 1948 *USITA Convention.*)

The "U" In Business

BY DR. KENNETH McFARLAND

ONE OF the most astounding facts revealed by the research of personnel departments is that more than ninety per cent of failures in business, the professions, and the vocations are not occasioned by a lack of knowledge concerning the skill techniques involved. The vast majority of so-called "business failures" are in reality human failures and personality faults. The record shows that people are fired because they are lazy, irresponsible, disloyal, dishonest, have poor general judgment, are immoral or intemperate, use poor English, have poor personalities, or are chronic complainers. It seems that before a man can be a good business man, good professional man, or a good tradesman, he must first be just a good man.

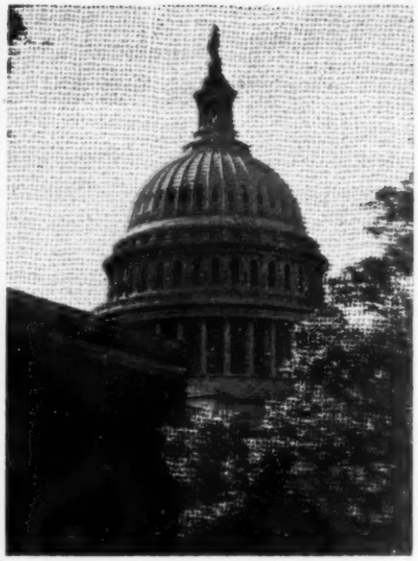


DR. KENNETH McFARLAND
Superintendent of Schools, Topeka, Kansas

The person who succeeds in the rapidly changing and difficult business conditions ahead must be a big personality. These people are characterized by several distinguishing traits. First and foremost they are *gracious.* The big man never tries to impress his employees with the fact that he is the boss. As John Temple said, "Don't strut. The fact that you now have a certain title or position doesn't prove anything except that maybe in selecting you somebody made a mistake that will be rectified later."

Big men are not defeated by the yappings of little men. When you climb out of a rut you must expect bumps. But it is how the bumps affect you that determines your caliber. Little men are flattened by them and never get up again. Big men are molded, shaped, and tempered by them until they become those great, rugged giants that stand out separate and apart on the mountainside.

Finally, big people like to be human. He puts first things first, and *people are always first.* The old Golden Rule philosophy is still the best basis for a successful business career.—(*Abstract of address presented at the* 1948 *convention of the United States Independent Telephone Association.*)



Washington Bureau REPORTS

BY ROLAND DAVIES and FRED HENCK

Mobilization Planning

FURTHER important strides have been taken recently in the advance planning for mobilization of the telephone industry in the event of any war emergency. Most outstanding has been the formation of a 15-member telephone and telegraph operating industry advisory committee to work with the Munitions Board and the National Security Resources Board.

Invitations were being dispatched to prospective members of the industry advisory committee as TELEPHONE ENGINEER & MANAGEMENT went to press. Membership of the group is expected to be announced within a short time, and it is expected to include executives of the level of Bell System associated company and Independent telephone company presidents and vice presidents.

Membership of a wire telephone and telegraph manufacturing industry advisory committee has likewise been agreed on, and invitations are to be dispatched in the immediate future. It is thought that membership of the group will cover all segments of the industry—Independent manufacturers, the Western Electric Co., and wire and cable producers. The mobilization planning in this field, on the basis of World War II controls and operations, has already been blueprinted by the task group, and the committee should speedily wind up that phase of its assignment when it is activated.

Meanwhile, the task committee of the telephone and telegraph operating committee has completed its report on the review and revision of the wartime control limitation orders for those services, with recommendations to be submitted to the industry advisory committee.

The task committee was composed of Richard A. Lumpkin, president of the Illinois Consolidated Telephone Co., and former president of the U. S. Independent Telephone Association; R. A. Gantt, veteran telephone executive of the International Telephone & Telegraph Corp., and a director of the General Telephone Corp.; J. B. Rees, Assistant Chief Engineer of the American Telephone & Telegraph Co. and K. B. MacGibbin, Western Union Telegraph Co. valuation engineer.

Mobile "Floor Show" Impends

ORAL ARGUMENTS on the proposed rules and regulations for the mobile radio-telephone services, one of the most important proceedings of its type since the close of World War II, are now going on before the entire membership of the FCC.

In an effort to obtain the views of the myriad of services covered by the proposed rules, the commission scheduled eight full days of oral argument, including one Saturday, when the agency normally does not hold formal proceedings.

The Commission listed about 100 witnesses appearing on the various mobile rules and frequency allocations. The argument schedule called for about 50 hours of direct testimony. Under the oral argument procedure, no cross-examination is permitted, although the Commissioners themselves may ask questions.

Included in the proceedings are to be oral arguments from a number of telephone companies, which did not fare well in the FCC's proposals for the general mobile service. The USITA has been allocated 45 minutes; the General Telephone Corp., 30 minutes; A. T. & T., two hours; Cincinnati & Suburban Bell Telephone Co., 30 minutes; Illinois Bell Telephone Co., 45 minutes; New Jersey Bell Telephone Co., 30 minutes; New York Telephone Co., 45 minutes; and Pacific Telephone & Telegraph Co., 30 minutes.

FCC "Unsnarling" Operation

ON THE BASIS of discussions on Capitol Hill, the FCC seems likely to placed early, if Governor Dewey is elected President, under the scalpel of the biggest "unraveling, unsnarling, untangling operation" in history as promised by the Republican nominee.

Reorganizing of the federal agencies, of course, will not be a wave of the wand affair, but will undoubtedly be a slow procedure with Congressional hearings and legislation. In all probability, this would mean no revamping of the Communications Act of 1934 until perhaps the second year of the Dewey administration.

At any rate, despite the talk in broadcasting industry circles of a "ripper bill which would give Mr. Dewey the opportunity to appoint an entire new Commission, some sources are inclined to discount such a possibility. Exclusive of the bad effect which might result from ripping out an entire agency is the fact that even if Governor Dewey wins the Presidential race hands down, the working GOP hold on the Senate is likely to be tenuous.

Meanwhile, a campaign to rumor FCC Commmission Robert F. Jones out of the running as the new FCC chairman appears to be getting under way, according to Capitol Hill informants. These sources state that Commissioner Jones' opponents are dusting off the old political trick of planting rumors that he either has no chance to become FCC Chairman or else does not want the post.

No one knows whether Commissioner Jones wants the Chairmanship or not, as he has kept his own counsel on the subject, but he still is viewed by many close observers of the FCC scene as a good prospect for the assignment if Governor Dewey wins the Presidential race. Because of his background as a Congressman, he is more likely to be selected Chairman than the other incumbent Republican Commissioners. Rosel H. Hyde and George E. Sterling, both veteran civil servants who have devoted most of their working careers thus far to service with federal agencies. Both were "career" appointments to the FCC, having formerly held staff posts.

Commissioner Jones, although he has dissented frequently to FCC majority decisions, is highly regarded in all quarters except New Dealers.

Rate Case Analyzed

THE STEADY increase of the ratio of debt capital to the total financing of telephone companies, a necessity since the war because of the tremendous competition for investors' dollars and the relatively low earnings of many telephone companies common stocks, was a keynote of a significant analysis of rate case causes and considerations presented by Tracy J. Peycke, vice president and general counsel of the Northwestern Bell Telephone Co., at a recent meeting of the Public Utility Law Section of the American Bar Association.

Mr. Peycke noted that only 14% of the funds from all new corporate securities last year came from common stock issues. In the Bell System, which has obtained $2 billion in new capital and need a like amount in the next few years.

Discussing the present difficulties of new financing, he said "Business corporations generally, however, have been in a position to expand their facilities in spite of this. They have done so to a very large extent by the use of retained earnings. The telephone companies are unable to to do this. They have no alternative to seeking new capital."

Keynoting the view that the postwar questions raised are more economic than legal, Mr. Peycke said that utilities "which have vast requirements for new capital which can come only from investors willing to purchase their securities have a practical economic problem which is not helped much by examining precedents and reading the Constitution. However difficult of solution, the problem has been removed far from the realm of theory into that of practical business economics."

After viewing the Two Rivers, Wis., case in which the state Supreme Court overruled the commission in its view that a regulatory body need not find facts on which to base a rate case determination, Mr. Peycke said "On the other hand, there is much evidence that regulatory authorities generally do feel a keen sense of responsibility for the future of the services which they regulate. They are aware that good service can be furnished in the long run only by sound and healthy utilities, and that good service is worth what it costs."—THE END.

New CHANCE 8-way Expanding Anchor

Another contribution to better anchoring

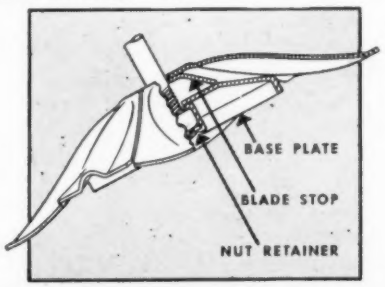
Here is another answer to the problem of rapidly rising line construction costs! The new Chance 8-way Expanding Anchor gives you more holding power for less money.

Better load distribution makes this new Chance Anchor stronger than other expanding anchors—and the absolute simplicity of its construction makes it the most smoothly operating expanding anchor on the market.

GREATER HOLDING AREA. Eight blades expand to form a square, with equalized load distribution all around the anchor. Each blade carries approximately one eighth of the load. There are no open areas between blades.

GREATER HOLDING POWER. The 8-way Anchor expands in the shape of a cone and holds like a wedge against undisturbed earth on all sides.

SIMPLE CONSTRUCTION. No moving parts, arms, or mechanical devices hinder the smooth operation of the 8-way anchor.



STURDILY BUILT. Each blade is formed with a reinforcing rib that prevents buckling. Hinges will not collapse under strain.

RETAINS SHAPE UNDER HEAVY LOAD. Repeated pull out tests show that the new 8-way Anchor develops more holding power under the same conditions than other expanding anchors of comparable size.

EASY, SURE EXPANSION. The pre-formed blades cut into solid earth with little disturbance and the pointed corner blades make starting easy. Linemen can tell when the anchor is fully expanded by the sound of the top plate hitting the bell-shaped blade stop.

BLADES ARE SUPPORTED BY BASE PLATE. They will not buckle down in the middle. The diagram, showing expanded position, illustrates how base plate supports blades.

NUT RETAINER, shown in diagram, makes it easy to push anchor to bottom of hole. The anchor rod and nut cannot be pulled through the base plate.

C4818

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CENTRALIA, MISSOURI • SAN FRANCISCO, CALIFORNIA

Rocky Mountain Telephone Association

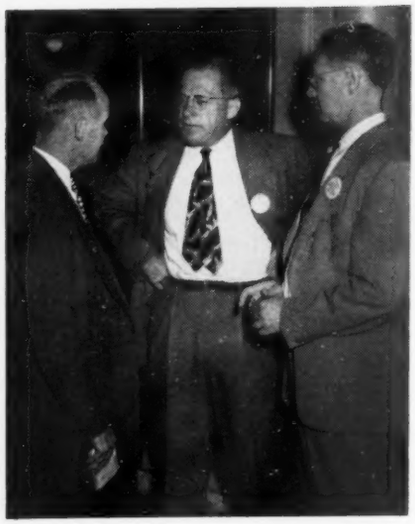
Holds Second Annual Meeting

By
LEON ROBERTS

**General Representative,
Gary Group Operating Companies,
Chicago, Ill.**

APPROXIMATELY 50 telephone men and women, some of them traveling distances up to 1,000 miles, attended the second annual convention of the Rocky Mountain Telephone Association at Denver, Colorado, September 16-17.

The convention of this young and sprightly handmaiden of Independent telephony was outstanding in enthusiasm and interest shown. All those present avidly sought solutions to their common problems, and plainly were anxious for more knowledge of the newest developments in telephony. Rate increase procedures, financing for expansions programs, and dial conversions were the chief topics of interest. Almost every speaker at the conclusion of his address was bombarded with questions by the members of the association, who operate small exchanges in Colorado, Utah, Montana, Arizona, New Mexico, Idaho, Wyoming and Nevada.



Left to Right: D. A. McLEAN, Mountain States T.&T., Denver; PAUL H. GRAVES, Spokane, Wash., and R. R. MANN, Western States Tel. Co., St. Louis, Mo.

The excellence of the program and the success of the convention was due in large measure to the chairman of the arrangements committee, D. A. McLean, connecting company manager, of Mountain States Telephone and Telegraph Company, Denver, who was given a unanimous vote of thanks. A special entertainment program was held for the women in attendance, the feature to which were tours of Denver's points of interest and of the mountain parks. Music and entertainment by local radio talent featured the banquet, attended by some 75 persons.

Clive W. Haas, of Big Timber, Montana, was elected president to succeed Richmond R. Mann, who presided over the sessions. T. Clark Callister, of Fillmore, Utah, was elected vice president, and Fred C. Janzen was re-elected secretary-treasurer. New directors elected were: Mills Roberts, Hobbs, New Mexico; G. T. Stoner, Lincoln, Montana; H. R. Bean, Cascade, Iowa; J. W. Baker, Coeurd'Alene, Idaho, and H. P. Morgan, Eagle, Colorado. The following directors were re-elected: Ward W. Blazzard, Kamas, Utah; T. Clark Callister, Fillmore, Utah; Clive W. Haas, Big Timber, Montana; C. M. Hart, Kingman, Arizona; Fred C. Janzen, Rockland, Idaho; Osborne

Directors of Rocky Mountain Telephone Association. Back Row (l. to r.) VICTOR D. WRIGHT, S. M. SARGENT, J. W. BAKER, HARRY R. BEAN, J. W. CORBIN, and W. W. BLAZZARD; Front Row (l. to r.) D. A. McLEAN, GEO. STONER, MILLS ROBERTS, FRED C. JANZEN, and T. CLARK CALLISTER. Absent: C. W. HAAS, C. M. HART, O. LOW, M. H. MORGAN, and R. R. OLSEN. (Photos on Rocky Mountain Convention provided by Mountain States T.&T. Co.)

Group photograph of conventioners attending second annual meeting of Rocky Mountain Telephone Association.

Low, Jr., Afton, Wyoming; D. A. McLean, Denver, Colorado; Richard R. Olsen, Holbrook, Arizona; Victor D. Wright, Strasburg, Colorado; and S. M. Sargent, Espanola, New Mexico.

F. P. Ogden, president of Mountain States Telephone Company, gave an address of welcome, and advised the telephone people to carry on with a cheerful note in spite of the terrific challenge facing the industry at the present time, declaring that telephone people long since have learned that most of their worries never come true, if they plan carefully for the future. Announcing that Mountain States has just installed its 1,000,000th telephone, Mr. Ogden said:

"Just a few years ago—in 1939—there were only 500,000 telephones in the seven states we serve, and it had taken us about 60 years to grow to that size. We added the second half-million in less than ten years! Colorado's development has played an important part in this growth. Despite post-war shortages, we have added 95,400 telephones since January 1, 1946—more than in the previous ten years combined. We are now serving about 262,000 in the state. There are still unfilled orders, pending the installation of more equipment in our buildings and the extension of wire and cable facilities. Completing these orders is our number one job."

Leon F. Roberts, general representative, Gary Group operating companies, was the next speaker. Appearing as a representative of the U. S. Independent Telephone Association, Mr. Roberts, in his capacity as a member of the board of directors, extended greetings from the national association and the hearty good wishes of its officers. Mr. Roberts then addressed the convention on the subject, The Small Company and Its Public Relations.

Earnings and Rates was the subject of Ray F. Red, commercial superintendent, Southwestern Associated Telephone Company, Lubbock, Texas. Mr. Red emphasized the need for adequate exchange service rates. Pointing out that present high toll revenues cannot be depended upon, Mr. Red advised the operators to investigate all sources of income and to evaluate the adequacy of their monthly charges for services.

In giving his report, the secretary, Fred C. Janzen said that several new members have been gained during the past year and that treasury cash balance is $4,323.

Economics of Dial Conversions

INVEST YOUR "PIN MONEY" IN THE BEST

LOCUST PINS

Locust wood is practically impervious to decay and is impenetrable to moisture. Because of its close-grained hardness locust can be machined into strong, long lasting pins of standard specifications that can be counted on to retain their size and shape.

OAK BRACKETS

Oak pole brackets of unquestioned quality are in demand now as never before in the face of the qualifications necessary in the equipment and materials needed today to "keep 'em talking." Present day maintenance and repair have every reason to demand and get only the best.

GLASS INSULATORS

Research and experiment have produced in Hemingray insulators a glass insulator that is better than any ever before offered.

Non-porous, non-deteriorating, uniform coefficient of expansion and high mechanical as well as high dielectric strength are some of the many qualities that rank Hemingray the "best on the line."

BUCKEYE TELEPHONE and SUPPLY CO.

COLUMBUS 6, OHIO

Left to Right: R. R. MANN, GEO. HAMBURGER, D. A. McLEAN and LEON ROBERTS, discuss Rocky Mountain convention.

Left to Right: JOHN E. WRIGHT, MILLS ROBERTS, M. H. MORGAN and A. R. KNOLL, pause for convention photographer.

was discussed by Fred E. Norris, vice president, General Telephone Corporation, whose paper elicited a high degree of interest from all those present. Declaring that dial conversions are now made at a greater rate than ever before, Mr. Norris expressed in interesting, but simple and down-to-earth reasoning, how small telephone exchange operators can determine whether dial conversions are economically sound. He said that most dial conversions prove economical, but some do not. It is important to know, therefore, what results to expect in any given case. His discussion from then on revolved around the factors which must be considered in estimating the financial results of a conversion.

Mr. Norris called attention to the booklet published by U. S. Independent Telephone Association, titled, The Economic Aspects of Small Office Dial Conversions, and suggested that all persons interested in converting to dial request one of these booklets. In as much as this booklet deals with the mechanics of bringing conversion factors into economic focus, Mr. Norris limited himself largely to a discussion of the principles.

In closing, Mr. Norris said that circumstances sometimes justify a conversion which might not prove in financially. Whether it is advisable to proceed with conversion under such conditions, will depend upon a number of things such as, for example, whether adequate rates which customers are willing to pay can be obtained, and the question of whether earnings from other exchanges owned by the same company are sufficient to offset losses occuring in the exchange to be converted.

Paul H. Graves, of Spokane, general counsel, Oregon and Washington telephone associations, discussed Rate Basis and Financing. In mentioning the sources for financial assistance available to the small companies, he stated that the loans from suppliers, from underwriters' groups and from the life insurance and bank combination groups, were not as suitable to their needs as the groups of "package" investors, who will make the long-time loans.

Mr. Graves described the gravity of the small companies because of the depreciation of plant during the last six or seven years due to the war, the increase in population, the demand for modern type of equipment and service, and the greatest inflation period in the history of the country. He also said that in many instances the present rate base does not build up reserve to take care of the present demands, and that the impact of a deplorably reduced rate base which had been in effect for fifteen or twenty years was now being felt.

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Line Tools...

for Construction and Maintenance

PIKE POLES · PEAVIES

WIRE GRIPS · TACKLES

CANT HOOKS · LUG HOOKS

PAYOUT REELS

Experienced crews prefer Dicke line tools for construction and maintenance work. They depend on their rugged durability—their tough, sure strength in the pinches. From pike pole to payout reel Dicke line tools are uniformly satisfactory. You'll find a Dicke tool for every construction need—all listed in the Automatic Electric catalog.

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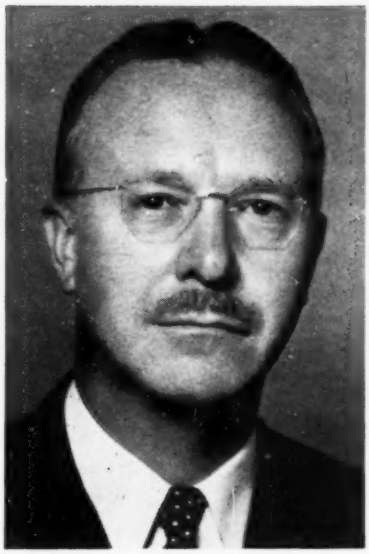
Commissioner John R. Barry, of the Colorado Public Utilities Commission, spoke on Present Day Money Market and Related Problems of the Telephone Industry. Noting that the utility field is not the only group seeking money, Commissioner Barry said the telephone industry is meeting stiff competition from electrical utilities, gas utilities, industries and real estate enterprises. Due to existing conditions, he continued, there is a need today for an adjustment of the capital structure of many companies, and they are going to have to spread out more risk or equity, and bring into better balance the ratios between debt and ownership. Commissioner Barry suggested that convertible debentures—that neat little instrument of financing that is debt, but can be coverted into equity—be given consideration if financing is entertained. This may be the answer, he said, to many problems, for convertible debentures that can be converted into common stock will provide the necessary funds and, upon conversion, bring into play the proper ratios between equity and debt.

Accounting Records for Small Telephone Companies, the topic chosen by Paul E. Remington, Comptroller, the Mountain States Telephone Company, elicited great interest. Explaining in non-technical and understandable language how good accounting records are needed, and how they can be maintained, he discussed fundamentals of accounting.

At their organization meeting, the directors decided to hold the 1949 convention in Salt Lake City, Utah.



LEON ROBERTS, general representative, Gary Group Operating Companies, Chicago, represented USITA at Rocky Mountain Convention.

Coming Conventions

South Dakota Telephone Association, Cataract Hotel, Sioux Falls, October 20-21.

The North Carolina Independent Telephone Association, Grove Park Inn, Asheville, October 25 and 26.

South Carolina Independent Telephone Association, Wade Hampton Hotel, Columbia, October 28-29.

Florida Telephone Association, Orange Blossom Hotel, Sarasota, November 8-9.

Virginia Independent Telephone Association, Roanoke Hotel, Roanoke, November 11-12.

Missouri Telephone Association, Governor Hotel, Jefferson City, November 15-16.

Alabama Telephone Association, Jefferson Davis Hotel, Montgomery, November 18-19.

Oklahoma Telephone Association, Huckins Hotel, Oklahoma City, November 18-19.

Georgia Telephone Association, Henry Grady Hotel, Atlanta, November 22 and 23.

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Underground Construction

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LEXINGTON, KENTUCKY

Experienced linemen the world over have learned to depend on Bashlin equipment. **Safety belts with sliding "D" ring have been a Bashlin feature for more than 10 years.** Play safe at all times . . . use Bashlin Linemen's Equipment. Write for catalog today.

W.M. BASHLIN COMPANY
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A REPORT OF GOOD PROGRESS

The advertisement on the opposite page tells of the constant progress that's being made to give everybody, everywhere, more and better telephone service than ever before. It appears in national magazines during October.

AN ADVERTISEMENT OF THE BELL TELEPHONE SYSTEM

Always Trying & Trying
We're speeding all our work and skill
To make your service better still.
We're planning, building, buying
And most of all we're trying.

"To Make Your Service Better Still"

In the past three years, we have extended and improved telephone service faster than ever before. We're trying to do even more.

Every month we're putting $120,000,000 into new telephone facilities—completing new buildings all over the country—adding 250,000 new telephones in cities and on farms—changing 100,000 telephones to dial—adding 170,000 miles of Long Distance circuits.

So if you're waiting for a new telephone or you'd like individual service instead of a party line or there's something about telephone service you'd like to have made better, we want you to know that we are moving along at a fast clip.

Your needs are very real to all of us and we won't be satisfied until everybody, everywhere, has more and better service than ever before.

BELL TELEPHONE SYSTEM

Service and Financial Problems

(Continued from page 56)

business has become unprecedented, so, also, has the cost to the industry to meet the desired expansion increased by heretofore unknown and uncalculated costs. The unit costs have been tremendously increased by reason of the increase in wages paid for labor, as well as the high cost of material. It is evident from the continual requests being made to the industry for additional extension service and the complaints made to the various regulatory authorities for failure to obtain service that a greater responsibility than ever heretofore is being imposed upon the industry and the regulatory commissions. To meet adequately these increased requirements is a mutual problem of the industry and regulatory agencies. An attitude of complete confidence and cooperation on behalf of the industry and the commissions, as well as the public is essential to reasonably meet the public requirements of this expanding program. This program of expansion of necessity brings into being the importance of the financial requirements of the industry to finance it.

The enlargement and adequacy of service, and the need for additional capital go hand in hand in the proper development of the telephone business. You cannot successfully have one without the other. The two are inseparable and essential to meet satisfactorily the public requirements. The how-to-raise the necessary capital to meet these financial needs is the sixty-four dollar question. To obtain the necessary capital will not be so easy for some of the companies. It will not be wise for the companies to become too heavily burdened with debt. I am confident that you will agree that capital structures must be built upon bases of sufficient strength and stability to withstand any depression which may follow the period of inflation that is now obviously upon us.

During the Fall and Winter of 1945 and 1946 manufacturing industries obtained large amounts of new capital for reconversion and expansion purposes. A substantial portion of this capital was raised through the sale of common stock largely at from twenty to as high as forty times current net income. A large amount of capital was invested in these securities by individuals in anticipation of increased earnings during post war prosperity. This demand for new money has undoubtedly decreased the supply and there is today considerably less money available for investment in equity securities.

Hence we see that money is not now so easily obtained as it was in the recent past.

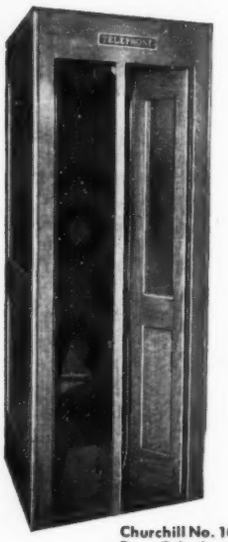
Thus we find the law of supply and demand manifested in the increased cost of money now in evidence. Interest rates have stiffened during the past several months narrowing the differential between the return on equity capital and the return on borrowed capital. This has made utility common stock less attractive to the investor, especially is this true as to those wealthy individuals who desire to invest in the securities of an enterprise paying higher dividends though the security may not be as financially sound. This condition is adverse to the sale of common stock of utilities. Therefore by reason of these circumstances, the utilities have largely had to look to the institutional investor for their capital needs, and there have been limitations imposed upon this class of investors limiting the percentage of their portfolios which may be invested in equity securities thereby creating a marked tendency to finance through debt securities.

Earnings Must Be Maintained

It cannot be seriously questioned that the earnings of the industry should be kept at a level high enough to attract sufficient capital to the industry to meet its reasonable demands. This is necessary for the proper protection of the public interest, and it is not detrimental to the best interest of the rate payer. It is the duty of the regulatory commissions to exert their best efforts to keep all utilities at all times in a safe and sound financial condition. Investors cannot be expected to invest in securities of a utility when

(Please turn to page 88)

STROMBERG-



The Churchill No. 100 Folding Door Telephone Booth

The churchill...

an attractive telephone booth

Not only attractive—but comfortable and private—the CHURCHILL No. 100 Folding Door Telephone Booth will increase your pay station business.

Operating companies have found the CHURCHILL No. 100 Folding Door Telephone Booth a builder of pay station business.

It is constructed as a single unit and equipped with a reinforced back panel for mounting a wall telephone or coin collector.

The CHURCHILL Booth is made of selected white oak and is available in light or medium oak in a satin finish.

Included as standard equipment are electric light and automatic electric ventilator.

Overall height is 84¾"; width, 30½"; depth, 30½". Shipped knocked down and crated.

Illustrated literature available.

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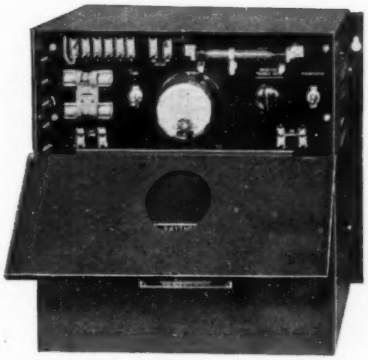
RG-CARLSON Recommends

. . . dependable battery charging with the

raytheon recticharger!



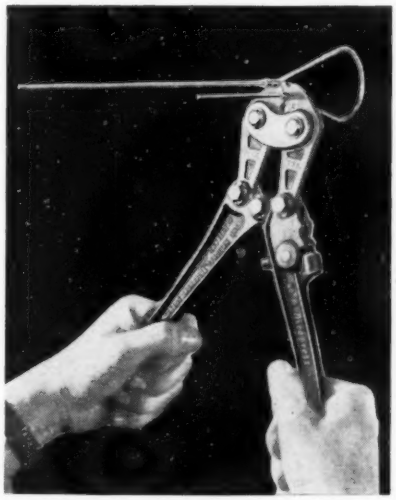
A small storage battery floated across the terminals of a Raytheon Recticharger provides closely stabilized DC voltage . . . longer battery life . . . and improved operation of manual or automatic telephone systems.

These are *proven* advantages that stem from exclusive design and long service to the telephone industry.

When replacing, expanding, or modernizing switchboard equipment, utilize Raytheon's extensive field experience and complete line. Available from 1.0 to 24.0 amperes with either 24 or 48 volt output.

for better offset dead ends specify

nicopress!



You can't buy better Dead Ends than *Nicopress!*

Designed for use with either copper, Copperweld, or iron wire, *Nicopress* Dead Ends star in strength and tightness.

Installing these Dead Ends is simplicity itself. You need no extra tools—the same tool used in making regular line splices will make the offset dead end as well.

Nicopress Dead Ends make possible a tail of any desired length.

These Nicopress tools are small and compact—can be operated with no trouble at all close to insulators or cross arms.

a perfect job every time with the

dillon temperometer!

Construction and maintenance departments of the largest utility and telephone companies have adopted the Dillon Temperometer as standard equipment for testing correct temperatures of cable damming and impregnation waxes, paraffin, compounds and wiping solder. Laboratory and field tests have proved unquestionably that the Temperometer is an essential factor in adding to cable efficiency.

- Large, easy-to-read dial and convenient handle. Calibrated in Fahrenheit Registers to 1000° F.

Dimensions

Width of Dial, 2⅛"
Length of Handle, 5⅝"
Size of Tube, ¾"
Length Overall, 9"

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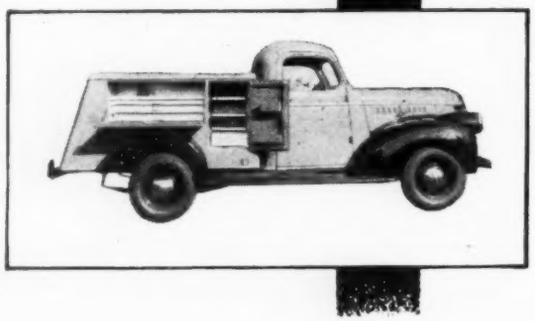
If you like the service, you come back for more.

It takes DEPENDABLE SERVICE to keep customers . . .



that's why YORK-HOOVER BODIES are re-ordered again and again

Specific purpose design—dependable service—low maintenance service—that's what operators are getting from YORK-HOOVER BODIES. And so the number of York-Hoover repeat customers is constantly growing.

This steady increase in customer approval of York-Hoover Bodies is the result of *sound engineering* and *fine craftsmanship,* factors which have kept York-Hoover a leader in the production of quality truck bodies for more than 55 years.

YORK-HOOVER
BODY DIVISION
YORK, PENNSYLVANIA CORPORATION

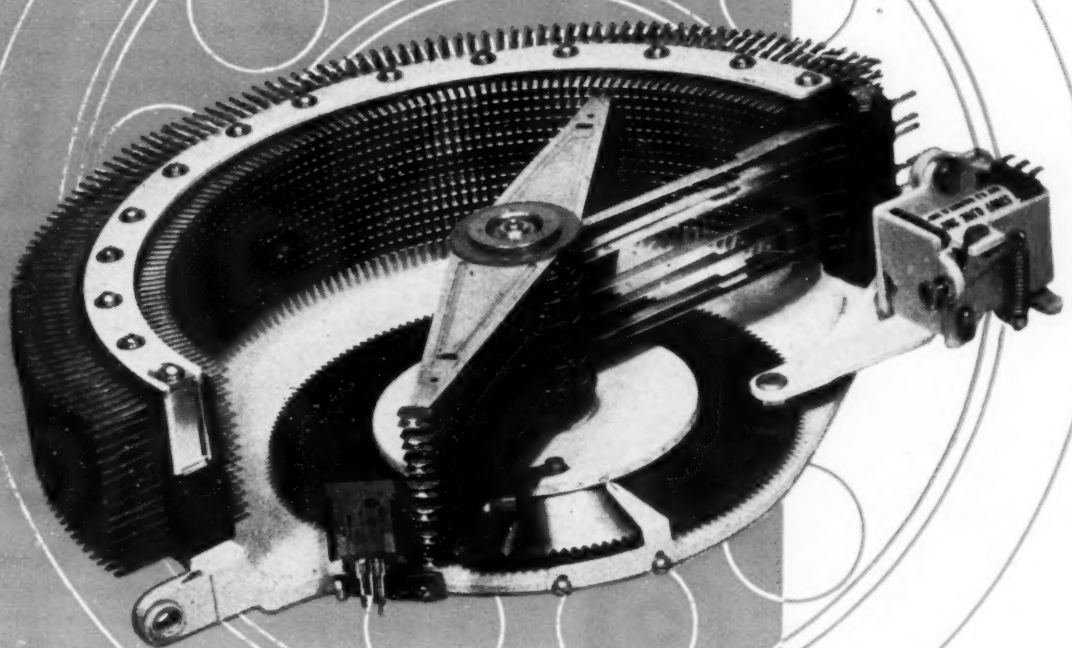
its rate return is so low as to make it doubtful in the minds of the investors as to the wisdom of such investments. If such a utility is able to secure money at all it will not be able to do so on as favorable terms as will the utility that is and has been receiving a fair return on its investment consistently for a number of years. This is adverse to the best interest of the utility and to those who use its service. Regulatory commissions should have the alertness and the courage to aright situations such as these.

Insufficient Rates Mean Lessening of Service

The increasing of rates to utilities is not a decision that will bring much public acclaim, but if it is the correct conclusion to be reached, it should, in all fairness and good conscience, be the decision rendered. When utilities are required to serve the public at miserly rates of return on their investments in property dedicated to public use, the public as well as the utility suffers. The public demands and should receive good service. It is essential for the best interests of the public. But good service cannot be maintained when the rates are unreasonably low. An insufficient rate of return to a utility necessarily means a lessening of the service being rendered to those it serves. This condition brings about criticism of the utility and causes the filing of complaints with the regulatory commissions. This condition brings about dissatisfaction with the users of its service. It creates poor public relations for the utility.

A utility cannot maintain a high grade of service unless it is being fairly compensated on its investment. A subscriber should pay for good service and should receive it. Poor service at any price is high. It has been my experience that the public is willing to pay reasonable rates if the service is satisfactory. It has been my observation through the years that the people are inherently honest and desire to see the other fellow treated fairly, and by the same token expect to be fairly treated. It is the obligation of the various utilities and commissions to see that the facts as they exist be fully explained to the public. When this is done it will to a substantial degree minimize the criticism leveled at the utilities and commissions.—*Abstract of paper presented at the* 1948 *U S I T A Convention.*

ROCHESTER *Cuts Over*



THE FIRST MAJOR ROTARY INSTALLATION IN THE UNITED STATES

...by Federal

An IT&T Associate

AUGUST 27 1948

A Significant Date in Telephone History

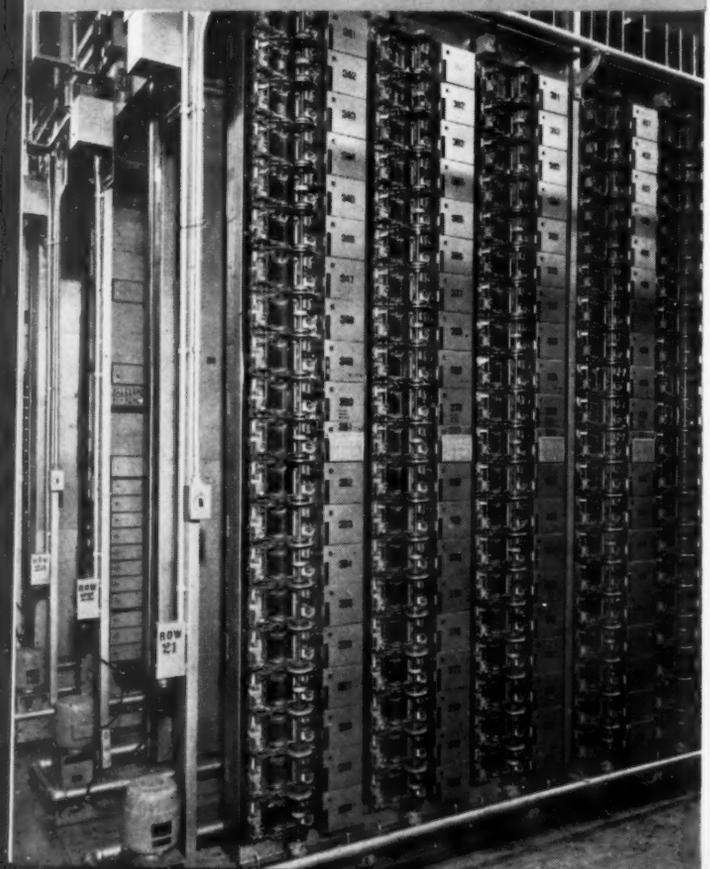
Signal to cutover is given by John W. Morrison, President and General Manager of the Rochester Telephone Corporation (left) with Admiral Ellery W. Stone, President of Federal Telephone and Radio Corporation (center) and G. William Miller, Chief Engineer of the Rochester telephone company.

THE ROCHESTER CUTOVER may well become a historic phrase in the independent telephone industry.

Not only is this cutover one of the largest ever made by an independent operating company ... not only does it signal the first major use of Rotary Dial Switching in this country ... but it brings to subscribers a new type of high-speed efficient telephone service that will be watched with interest throughout the industry.

In a sense, the cutover at Rochester, New York, marks the return of Rotary to America—for this system was born in American laboratories ... brought to a high state of perfection by engineers of the International Telephone and Telegraph Corporation ... *proved in service* through many years of highly successful operation covering more than 2,000,000 lines in installations abroad ... and then further developed to meet the requirements of the American telephone industry by Federal Telephone and Radio Corporation.

PARTIAL VIEW OF SELECTOR BAYS



The Rochester Telephone Corporation, one of America's great independent telephone companies with a history of half a century, wrote a brilliant episode in its long and distinguished record on August 27, 1948. On that date it inaugurated Federal 7A-2 Rotary service for 21,251 stations in its new Baker and Hamilton office, serving the principal shopping and banking district in the heart of Rochester, as well as call indicator and direct trunking service with 7 manual telephone offices in the same multi-office network serving an additional 109,799 stations.

This history-making cutover, representing a significant forward step in independent telephone operations, will be followed by cutovers in the new Empire and Locust Rotary offices. Further conversion to dial of all remaining manual lines and stations in the Rochester area will be carried out as rapidly as practical.

Rochester's Rotary installation was engineered for the job at hand. The design was the result of close collaboration by Rochester, Federal and IT&T engineers, whose task it was to meet the many and varied complex requirements of a multi-office area the size of Rochester. Many new and important technical improvements were provided through the use of Federal's 7A-2 Rotary System ... so that today Rochester may well claim to possess one of the most modern, most efficient dial telephone installations now in operation.

The Rochester Telephone Corporation is to be congratulated ... for its foresight, its spirit of enterprise, its initiative in completing this major step in one of the most ambitious programs of conversion yet launched in the independent telephone industry.

THE BEST *in Modern Telephone Service*

Positive Indication of Call Progress Given to Subscriber

In the Federal 7A-2 Rotary System, it is impossible for a subscriber to get "lost" on a call that does not go through, either due to incomplete dialing or failure of the switching equipment. Once a subscriber's line relay operates, the call must proceed to completion—either the desired subscriber's line or the intercepting operator—depending upon whether a working or non-working number was dialed.

If this end result is not achieved, one or more of the following functions will be carried out automatically by the Rotary Register circuit:

1. In case of incomplete dialing or all paths and trunks busy—restoral of all circuits after predetermined number of seconds with dial tone returned to calling party.

2. In case of "receiver off hook," shorts, grounds and other line troubles—automatic operation of false call finder which connects the line in trouble to test desk and displays the terminal number of the line involved.

3. When a subscriber completely dials the desired number and encounters a defective circuit in the switching train—dial tone is automatically returned to calling party, the "hold-over" feature then functions, and the complete train of switches in which the fault occurred is removed from service and left set-up to be cleared by the switchman.

Tape Printer Controlled Automatic Routine Test Facilities

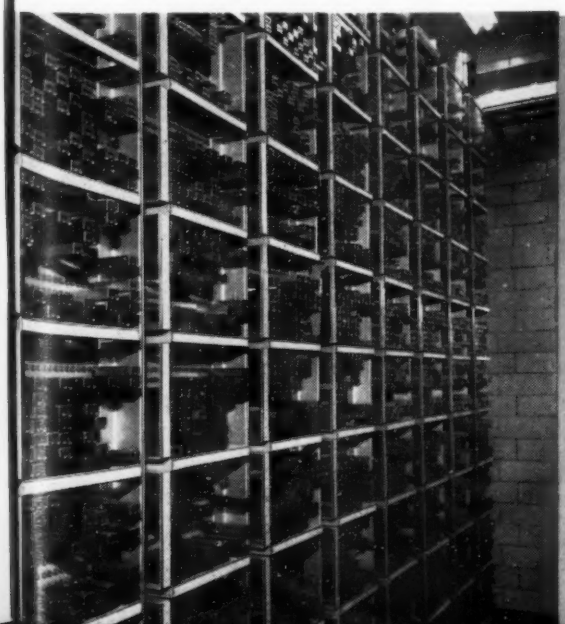
Maintenance of 7A-2 Rotary equipment is economical and easy—as a result of its highly advanced routine test facilities. A complete 10,000 line exchange can be fully routine-tested at night while the exchange is unattended, and a positive indication will be available the next morning to the chief switchman in the form of a *printed tape* indicating the total tests made, and the results obtained on each circuit tested, for example, test OK, failed on test or found busy.

Direct Reading Traffic Recorder

Federal's 7A-2 Rotary System is equipped with a direct-reading traffic recorder. This recording equipment is unattended and gives an accurate and automatic determination of traffic in 100-second calls. It may be connected to the various trunk groups corresponding to the different switching stages in the exchange and used for any fixed interval during any period of the day or night.

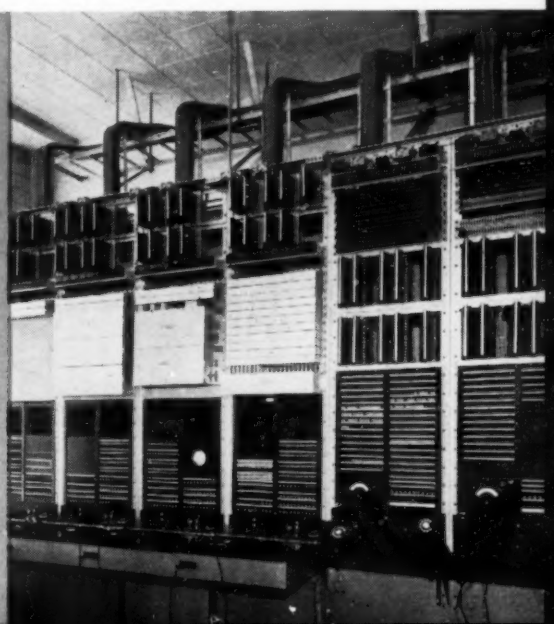
Plug and Jack Message Register

A simple plug-in method of changing over from an unlimited call basis to measured service is provided by the insertion of "plug-in" message registers into pre-wired jacks.



Wire chief's test panels include toll and local test panels and inter-office trunk test bays.

Subscriber's message register bays show simplicity of "plug-in" message registers for measured service.



Watch Rochester
Watch Rotary

Rochester is the first of a series of major conversions that are introducing Rotary in the United States.

Despite handicaps of postwar reconversion and shortages of both trained personnel and materials—Federal's 7A-2 Rotary equipment was engineered, manufactured, delivered and installed within a creditably short space of time.

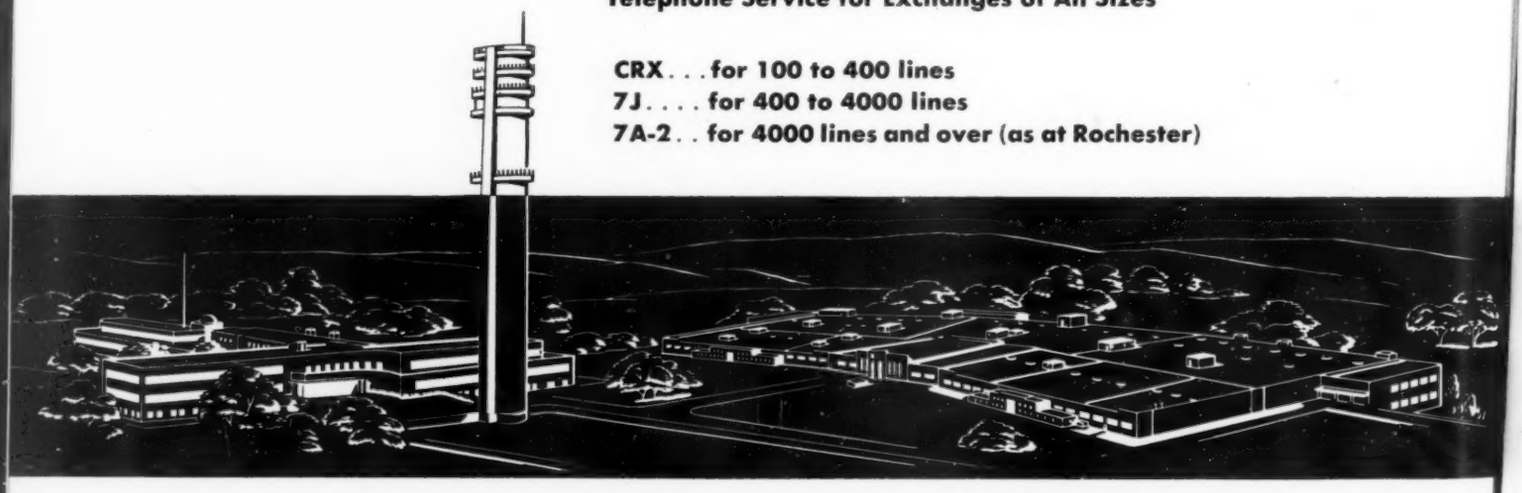
Already Rochester is operating its new Rotary System smoothly with a limited complement of personnel—less than the number generally accepted as normal in the industry. And Rochester stands to benefit by exceedingly low parts replacement as well—rugged Rotary components have a long life expectancy.

Now telephone men will be able to view at first hand Rotary's simplicity of operation, its flexibility and economic advantages. They now have available in America a new system of machine switching that can solve many operating problems and embodies new and important technical improvements.

Investigate Federal Rotary. No matter how small or large an installation is required, there is a Federal Rotary System that offers you low initial cost . . . flexibility . . . efficiency and economy of operation. Deliveries may be had within 12 months of placing the order for larger installations—in even shorter time for smaller systems.

Federal Rotary Systems are Built to Provide the Best in Modern Telephone Service for Exchanges of All Sizes

CRX . . . for 100 to 400 lines
7J . . . . for 400 to 4000 lines
7A-2 . . for 4000 lines and over (as at Rochester)



ONE OF AMERICA'S GREAT FACTORIES SERVING THE TELEPHONE INDUSTRY*

FEDERAL TELEPHONE & RADIO — FTR

Federal Telephone and Radio Corporation

*TM Registration Applied For

100 KINGSLAND ROAD, CLIFTON, NEW JERSEY

In Canada: Federal Electric Manufacturing Company, Ltd., Montreal, P. Q.
Export Distributors: International Standard Electric Corp. 67 Broad St., N. Y.

WHAT IS ROTARY?

Here is how a typical connection is made between two subscribers:—

The moment the calling subscriber lifts his receiver, finder switches rotate and find the calling line. It is possible that two or more finders may simultaneously reach the calling line; but only one finder stops on the terminal. (This is known as the "double test" feature, and is included in all Rotary circuits.) The calling line is now connected to a first selector and a free register is attached. This register connects dial tone to the line and receives the pulses from the dial. The register then acts to control all further selections required to advance the call to its destination. This is accomplished by revertive pulses, in some cases matched with the dialed pulses; until the required selectors are stopped on the trunk groups and terminals desired. It is to be noted that cross-connections may be made within the register so that the digits dialed can be translated as required to give different selections and alternative routings.

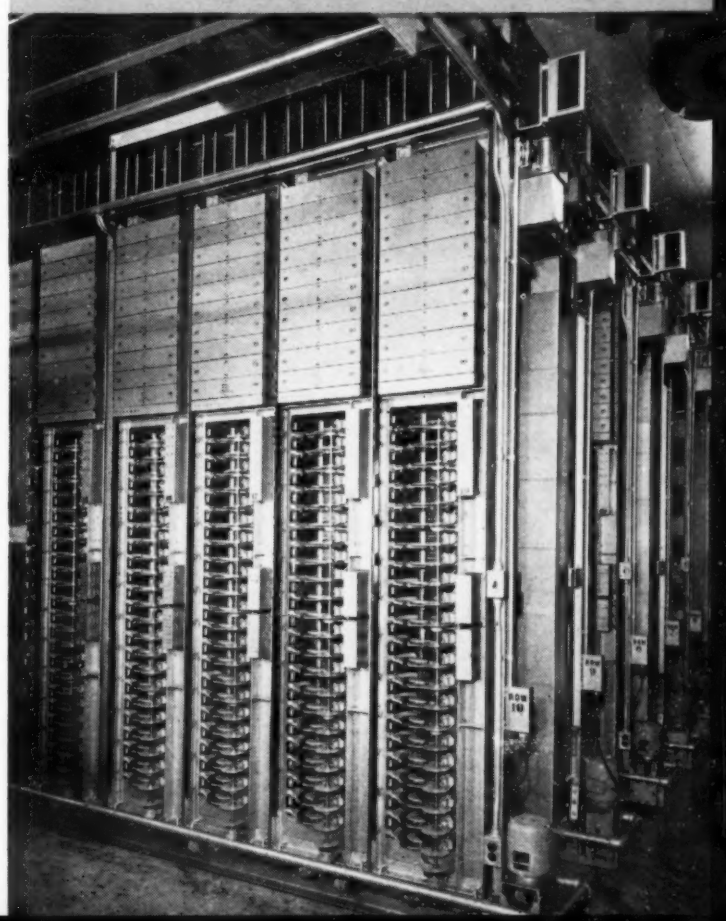
FEDERAL'S ROTARY SWITCHING SYSTEM is a completely developed, thoroughly engineered, mechanically proved system of machine switching that has demonstrated its superiority in many notable features. Essentially, it is a simple, power-driven mechanism using single-motion rotary switches to perform all local and inter-office connections. It employs the specially-designed Federal register as an inherent part of its operation.

The significant feature of the system is the fact that subscriber dial impulses are *stored in the register,* and revertive pulses are used to control the switching operations. This method offers the following advantages:

- *Dial pulses do not drive the equipment directly—therefore greater outside plant and station limits, both in line loop and leak conditions, as well as wider variations in dial speed, are made possible.*
- *Incomplete or improperly-dialed calls are restored after a predetermined time interval, and dial tone returned to the calling subscriber. In those calls where a trouble condition has been encountered, the switching train is removed from service for trouble tracing.*
- *Time-controlled, continuous hunting permits a higher trunk efficiency and fewer lost calls in the busy hour.*
- *Greater flexibility of subscriber numbering systems is gained.*

And most important, the Rotary system produces remarkable economies both in operating costs and in maintenance—due to its rugged and simple construction, its long-wearing components, its smaller complement of attending personnel and its minimum dependence on plant condition.

PARTIAL VIEW OF LINE FINDER BAYS



CHARLOTTE MANUAL EXCHANGE

23 A Positions, all arranged for automatic key sending to dial
8 B Positions—2 arranged for call indicator
3,148 Lines
8,511 Stations
50 Key Sending Trunks
40 Call Indicator Trunks

GLENWOOD MANUAL EXCHANGE

49 A Positions, all arranged for key sending to dial
19 B Positions—4 arranged for call indicator
7,375 Lines
22,673 Stations
125 Key Sending Trunks
100 Call Indicator Trunks

MAIN MANUAL EXCHANGE

New York Telephone Company Toll Office

98 Toll Positions
76 Outward
22 Inward
all arranged for automatic key sending to dial
93 Combined Line and Record Trunks (CLR-Toll)
100 Toll Switching Trunks, Inward and delayed

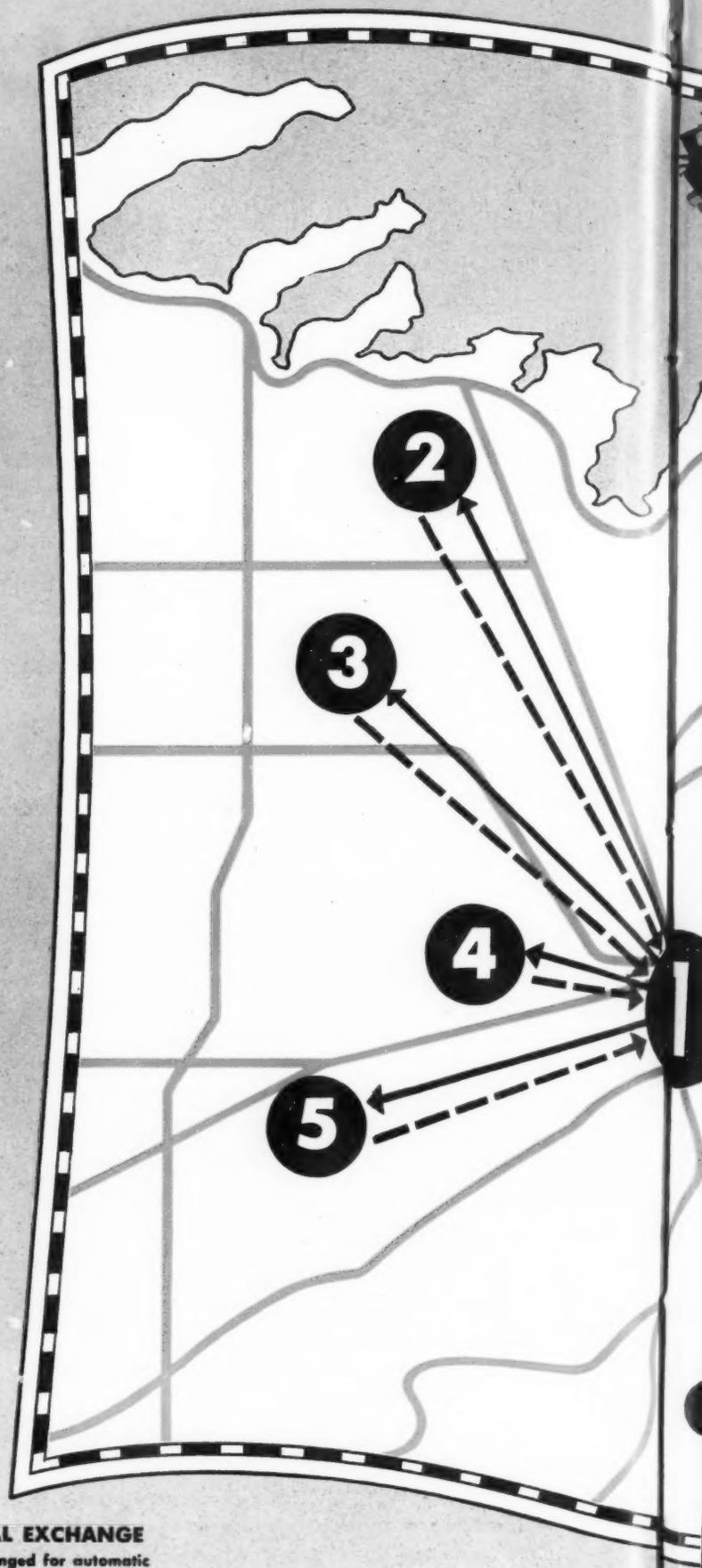
59 A Positions, all arranged for automatic key sending to dial
26 B Positions—6 arranged for call indicator
6,309 Lines
20,154 Stations
138 Key Sending Trunks
132 Call Indicator Trunks

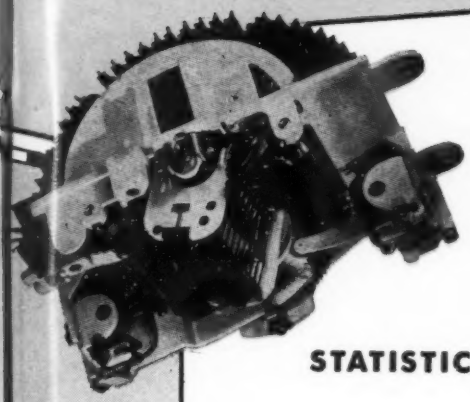
Dial Assistance A Board (DSA)
24 Completing Trunks to Automatic
43 "O" Operator Trunks
12 Positions

360-line PABX
7-J Rotary
2 Positions

GENESEE MANUAL EXCHANGE

49 A Positions, all arranged for automatic key sending to dial
17 B Positions—4 arranged for call indicator
7,664 Lines
19,511 Stations
120 Key Sending Trunks
96 Call Indicator Trunks



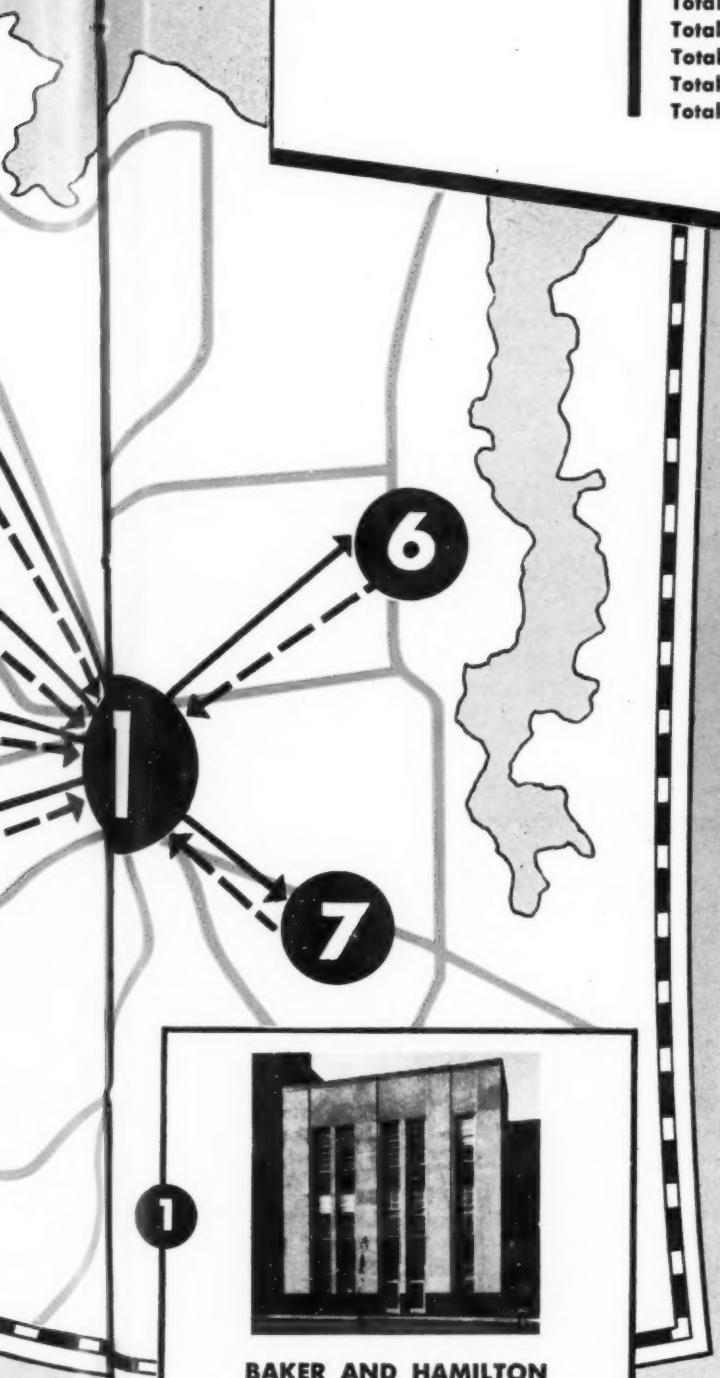


Traffic Data and Switching Diagram

ROCHESTER NETWORK

STATISTICS

Rotary Exchanges in Cutover	2
Lines Installed at Cutover	13,600
Terminals Installed at Cutover	20,000
Lines in Service at Cutover	8,716
Stations in Service at Cutover	21,251
Total Manual Exchanges	7
Total Manual Exchange Lines	41,413
Total Manual Exchange Stations	112,061
Total Lines in Rochester area	50,129
Total Stations in Rochester area	133,312



CULVER MANUAL EXCHANGE

34 A Positions, all arranged for automatic key sending to dial
14 B Positions—4 arranged for call indicator
6,426 Lines
16,263 Stations
110 Key Sending Trunks
88 Call Indicator Trunks

MONROE MANUAL EXCHANGE

50 A Positions, all arranged for automatic key sending to dial
15 B Positions—5 arranged for call indicator
8,470 Lines
20,070 Stations
177 Key Sending Trunks
120 Call Indicator Trunks

HILLSIDE MANUAL EXCHANGE

13 A Positions, all arranged for automatic key sending to dial
8 B Positions—2 arranged for call indicator
2,021 Lines
4,879 Stations
40 Key Sending Trunks
40 Call Indicator Trunks

BAKER AND HAMILTON 7A-2 ROTARY AUTOMATIC EXCHANGES

Lines Installed	13,600
Terminals Installed	20,000
Lines in service at cutover	8,716
Stations in service at cutover	21,251

LEGEND

CALL INDICATOR TRUNK
AUTOMATIC TO MANUAL
KEY SENDING TRUNK
MANUAL TO AUTOMATIC

Why ROTARY *Performance Features* OFFER

Large Consecutive Trunk Groups

Federal's 7A-2 Rotary System offers large consecutive groups of up to 30 trunks.

Flexible Line Groups

2, 4 and 8 party lines, main lines and PBX service lines can be assigned indiscriminately in any line finder bay or final selector bay.

Foolproof Double Test Circuits

With Federal's 7A-2 Rotary System, "double connections" are impossible—even though two switches test the same circuit at the same millisecond. This positive form of circuit operation offers your subscriber a genuine improvement in service.

Register Operation

The exclusive Rotary Register receives and records the dialed number, and controls the various selectors to set up the required connections. Thus the switches are directly actuated by the register and not by the subscriber. This allows the use of a simple, sturdy switch which requires less maintenance. Register operation provides great flexibility in trunking and numbering schemes by routing the call in the most advantageous manner with resultant economy in the number of switches. Greater range in dialing limit as well as loop and leak conditions is allowed.

Controlled "Continuous Trunk Hunting"

A feature of the Rotary selector is "continuous hunting." Instead of transmitting a busy tone to the calling subscriber when all trunks on the desired level are found occupied, the selector brush carriage will make a second or third sweep over the same group of trunks. This improves the grade of service in the busy hour by the successful completion of a greater number of calls.

"Continuous hunting" does not go on indefinitely. The call is automatically restored after a predetermined number of seconds and dial tone returned to the calling telephone at which time the subscriber may either hang up or dial again. Therefore "busy" actually means "busy"— not overloaded trunk groups – and subscriber complaints for this cause disappear.

Universal Party Line Operation

With Federal's 7A-2 System, party lines are connected terminal-per-station rather than terminal-per-line. This practice eliminates the additional "ring digit" in party line telephone numbers. A subscriber may move anywhere within the exchange service area without the necessity of a telephone number change, *since any ringing frequency may be used on any terminal-per-station.* This feature, available in Rotary, results in operating economy and reduction in directory changes and intercepting loads.

Automatic Permanent Signal Indication

"Receiver off hook," shorts, or other faults causing line relay operation are automatically picked up after a predetermined interval. Such calls are connected to the test desk where they are identified by the line finder terminal number being displayed on an indicator panel. Faulty lines are thus tested more rapidly; this means a reduction in station-out-of-service time, saves maintenance effort, and decreases switch occupancy time.

In cases where the final selector is held off normal due to failure of the called party to release (receiver off hook or line trouble), the circuit is automatically restored after a predetermined time interval and line in trouble automatically routed to the test desk as a permanent signal with its terminal number indicated.

Instantaneous Subscriber Control of Malicious Calls

Federal's 7A-2 Rotary System offers the facility for a subscriber immediately locking in the train of switches when he receives a malicious call. His action in such a case automatically brings the call in on the wire chief's desk where a suitable alarm is given and the terminal number of the line involved is indicated on a display panel.

NEWS BRIEFS

Communications Industry Conversion Under Study

Conversion of the communications industry to war production rapidly in case of emergency is under study by the Signal Corps and representatives of the industry according to announcement made by Major General Spencer B. Akin, the Army's Chief Signal Officer.

The announcement followed a conference in Philadelphia in which General Akin and Leighton H. Peebles of the National Security Resources Board participated. Mr. Peebles is expediting industrial mobilization planning.

A "contingent contract plan," designed to shorten the conversion time of industry from peace to war production, was proposed at the session. "It is believed by those attending the meeting," General Akin said afterward, "that the proposed contingent contract plan has much merit, and that some plan embodying most of the principles and essentials of the one discussed should be given most serious consideration looking toward its adoption." Details of the proposal were not given.

Yadkinville, N. C., Cutover To Automatic Operation

The Central Telephone Co., Charlottesville, Va., recently cut over the first Stromberg-Carlson XY dial switchboard south of the Mason and Dixon line at Yadkinville, N. C. The new board has an initial capacity of 200 lines.

General manager Leonard D. Densmore of Central Telephone made the fuse cutover in the presence of company and out-of-town telephone guests. His modernization program for Yadkinville included not only the new XY dial equipment, but a completely new outside plant—building, poles, cables, and subscribers' phones.

Mr. Densmore said that Central Telephone had planned dial installation at Yadkinville before the war and that when the conflict forced postponement he decided to include outside physical equipment as well. He was accompanied at the cutover by group manager W. S. Beddingfield and district plant superintendent Vernon Chase.

L. D. DENSMORE, general manager of the Central Telephone Co., Charlottesville, Va., pulls switch to cut over Yadkinville, N. C., to new Stromberg-Carlson XY dial operation, as (from left) D. B. WHITE and T. C. (TOMMY) THOMPSON of Stromberg and W. S. BEDDINGFIELD group manager of the Central Telephone Co., look on.

Stromberg-Carlson was represented by T. C. (Tommy) Thompson, telephone sales manager; William L. (Moon) Mollands, manager of telephone sales, Atlanta office, and D. B. White, sales representative.

Mobile Telephone Aids Cosmic Ray Research

The mobile telephone is getting up in the world.

Probably the highest telephone of any type in all North America—exclusive of those in aircraft—is the one recently installed in a trailer which spends considerable time atop 14,260-foot Mount Evans in Colorado.

The mobile telephone was recently placed in service by The Mountain States Telephone & Telegraph Company for the use of university scientists who are now engaged in a program of cosmic ray research and who had been handicapped by lack of communication with the outside world. Tests conducted by the telephone company revealed that, because the research station could be reached by Denver's urban service transmitter, installation of a mobile telephone was practicable.

Installed in a converted Army trailer, the mobile set is surrounded by an intriguing array of nuclear research equipment and a number of white rats used in experiments. It enables the scientists, who are from widely scattered institutions, to keep in touch with their colleagues, and to arrange for necessary supplies. The Denver switchboard permits prompt connection with most of the 36 million telephones in the country.

W. C. Henry Purchases Star Telephone Co.

Personal purchase of a majority of the shares of the Star Telephone Co., Ashland, Ohio, was announced recently by William C. Henry, president and

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TELEPRENE* Drop, Bridle, and Distribution Wires

and **TELESEAL*** Underground Communication Wires

ALL ARE NEOPRENE JACKETED TELEPHONE WIRES

The Difference in Cost is Pennies
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What are TELEPLATED* Conductors?

GraybaR Distributed by GraybaR ELECTRIC COMPANY

*®

* TELEPLATED conductors have a lead coating to resist corrosion, then a coating of brass is electroplated over the lead to provide enduring adhesion, — YES, Adhesion equal to the tensile strength of the conductors.

The WHITNEY BLAKE Company

New Haven, Connecticut, U.S.A.

general manager of the Northern Ohio Telephone Co., Bellevue. Price of the total shares is $2,100,000.

The Star system includes 15 exchanges and has 14,000 telephones. It is reported that Northern Ohio intends to make application for the purchase of the system from Mr. Henry within six months. The acquisition would then boost the Northern Ohio exchange total to 66 and number of telephones to 63,000.

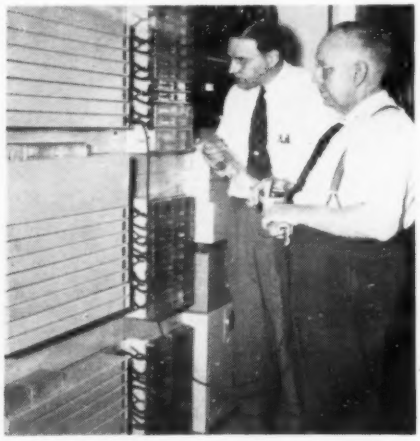
Nebraska Continental Tel. Co. Installs Carrier Equipment

Additional toll facilities to Callaway and Arnold, Neb., have recently been added, M. F. Snaveley, manager of the Nebraska Continental Telephone office in Kearney, announced.

The new facilities have doubled the number of calls possible to the two towns through installation of a toll carrier circuit. The carrier is operated on a voice frequency system which permits two conversations to be carried on one wire.

XY Dial System PABX Installed in Rochester, N. Y.

The first Stromberg-Carlson XY dial system PABX in the United States has been installed by the Rochester Telephone Corp. in the main office of the Lincoln-Rochester Trust Company. Lincoln-Rochester, one of the



CLAYTON GILBERT, left, of Lincoln-Rochester Trust Co. and JOSEPH A. REIF of the Rochester Telephone Corp. check operation of new Stromberg-Carlson XY system PABX.

largest banks in upstate New York, is housed in a modern 14-story building.

The new XY dial switchboard provides communication facilities within the bank, to associated branches throughout the city and county, and to regular city exchanges. It provides an ultimate of 300 extensions on a fully dial basis and has facilities for com-

(Please turn to page 102)

FROM THE COMPLETE LINE OF OLIVER POLE LINE MATERIALS

OLIVER TELEPHONE LINE PINS

The Oliver pins illustrated are made for use with standard insulators having 1-inch diameter pin hole. They are forged from high carbon open hearth steel, and hot dip galvanized. Wood cobs are of air-dried oak, boiled in paraffine.

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FULL LENGTH TREATED NORTHERN WHITE CEDAR

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PENTA POLES

They are pleasing in color —neat in appearance.

P&H

PAGE AND HILL CO.

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Our announcements appear in these pages in the hope that they will be seen by Telephone Engineers connected with the Operating Companies in those countries which constitute Great Britain's Export Market, for they are in a position substantially to assist world economic recovery. To them we would address the following appeal:—

"If you will specify British-made Strowger Equipment—as standardised by the British Post Office—you will be amply repaid. Firstly, you will be assisting your own country's trade, for Britain—having sold—can buy. Secondly, you will be providing your subscribers with the most efficient telephone service, and in the process be making a genuine contribution, through such efficiency, to world prosperity."

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British-made STROWGER Main Automatic Telephone Exchanges are providing service in or are on order for . . .

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Bahamas	Japan and Manchukuo	Union of South Africa
British West Indies	Netherlands and D.W.I.	U.S.S.R.
Brazil	New Zealand	Venezuela
British East Africa	Pakistan	
Canada	Poland	
Egypt	Portugal	
Great Britain	Portuguese East Africa	
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Light weight and easy to handle. No bulky blocks or ropes and chains to snarl or tangle.

14 to 1 ratio. Made of high tensile alloys.

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CHICAGO 6, ILLINOIS

pletion of calls to the city exchanges either through an attendant or by direct dial.

Incoming city calls are handled through a two-position attendant's cabinet with a full jack multiple of all extensions. Dial code calls and paging facilities are also incorporated.

Night facilities provide for extensions to be conneeted to city trunks for calls after the bank has closed and for receiving calls made to the extensions' night numbers. Calls received over the regular bank telephone number may be intercepted by the night watchman from any available telephone.

Kaufman, Texas, Cutover To Automatic Operation

Mayor Emmett Day officially opened the new automatic system of the Kaufman, Texas exchange of the Gulf States Telephone Company by dialing Mrs. R. J. Stokes, wife of the late Kaufman district manager. The company had assigned Mrs. Stokes the honor of receiving the first call.

I. F. Krehbiel Elected Vice Pres. Of Interstate Tel. Co.

C. E. Johnston, president of Interstate Telephone Co., Spokane, Wash., has announced the election of I. F. Krehbiel as vice president and his appointment to the position of general manager of all operations of the Interstate Telephone Co. Mr. Johnston, in commenting upon the the appointment said, "We are very fortunate to have in our organization a man whom we feel is capable of assuming the

(*Please turn to page* 104)

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of March 3, 1933,

of Telephone Engineer and Management, published monthly at Pontiac, Illinois, for October 1, 1948.

State of Illinois, County of Cook, ss.—Before me, a notary public in and for the State and county aforesaid, personally appeared Ray W. Smith, who, having been duly sworn according to law, deposes and says that he is the editor of the Telephone Engineer and Management, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—Telephone Engineer Publishing Corp., 7720 Sheridan Road, Chicago, Illinois.

Editor—Ray W. Smith, 7720 Sheridan Road, Chicago, Illinois.

Business Managers—Ray W. Smith & Roy F. Smith, 7720 Sheridan Road, Chicago, Illinois.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address as well as those of each individual member must be given.)

Telephone Engineer Publishing Corp., 7720 Sheridan Road, Chicago, Illinois.

Ray W. Smith, 7720 Sheridan Road, Chicago, Illinois.

Roy F. Smith, 7720 Sheridan Road, Chicago, Illinois.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state.)

Ray W. Smith, 7720 Sheridan Road, Chicago, Illinois.

Roy F. Smith, 7720 Sheridan Road, Chicago, Illinois.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

RAY W. SMITH,
Editor.

Sworn to and subscribed before me this 1st day of October, 1948.

(My commission expires Dec. 4, 1949.)

(Seal) RUTH LOWERY,
Notary Public.

For Economical
Open Wire Dead-Ends,

Use KEARNEY
WEDGE-TITE
CLAMPS

This stainless steel dead-end fitting is easily installed with ordinary pliers and can be re-used again and again should line alterations or repair necessitate disturbing the original installation. Available in three sizes to accommodate the most commonly used wires.

JAMES R. KEARNEY CORPORATION ST. LOUIS, MO.

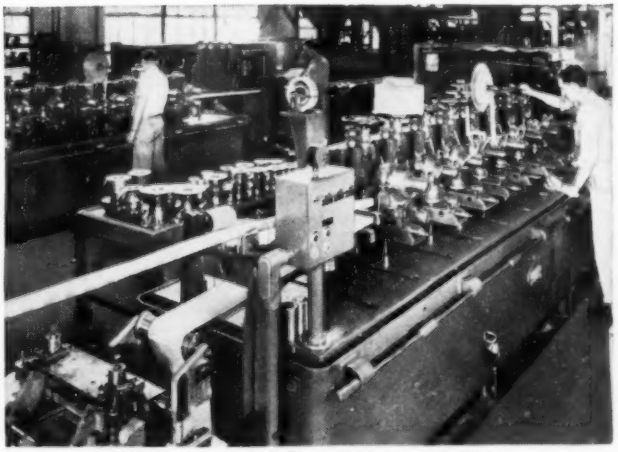
109

JAMES R. KEARNEY CORPORATION
4236 CLAYTON AVE. • ST. LOUIS 10, MO.
Overhead and Underground Utility Equipment

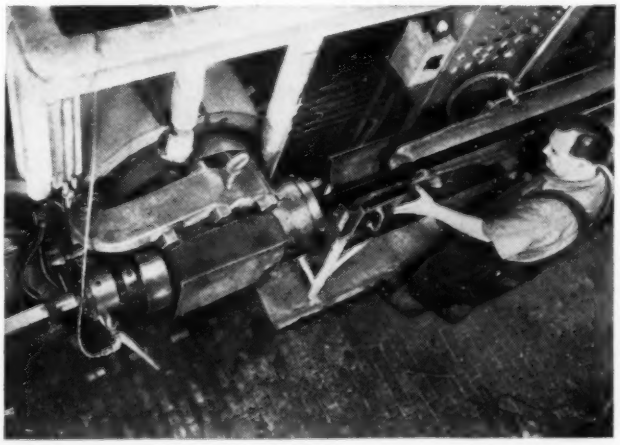
ALPETH...
a new type of cable covering

OUT of intensive research at Bell Telephone Laboratories and manufacturing developments by Western Electric has come a brand new type of covering for exchange area cable —Alpeth. The "Al" stands for an inner shield of aluminum; the "peth" for the outer coating of gleaming black polyethylene, a plastic. The combination of aluminum and polyethylene provides a flexible, moisture-proof, abrasion-resisting sheath—a valuable alternative to the traditional lead covering for telephone cable.

To produce this new cable sheath—in quantity, in the shortest possible time and to strict tolerances—was the problem facing Western Electric's manufacturing engineers. Their answer: the Alpeth production line, a combination of new machines and new manufacturing techniques which takes paper covered cable core, wraps it in aluminum, sheaths it with polyethylene, and turns out finished cable in a fast-moving continuous operation.



As the cable core moves through this machine, an aluminum strip comes up from underneath. After being corrugated to provide flexibility and strength, the aluminum strip is wrapped around the core.



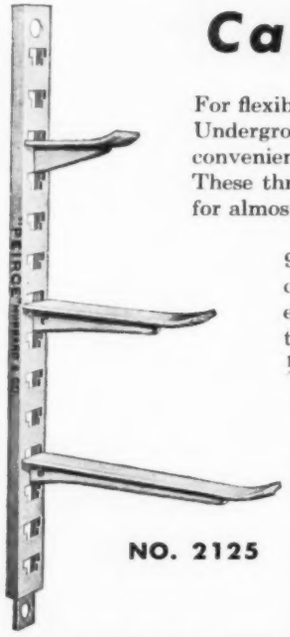
The aluminum-clad cable then passes into this machine and comes out seconds later with an impervious, flexible coating of gleaming black polyethylene.

Western Electric
TELEPHONE APPARATUS AND CABLE

JOHN LINEMAN OFFERS:

PEIRCE

Underground Cable Racks



For flexibility and ease of installation, Peirce Underground Cable Racks are made in three convenient lengths: 15, 24, and 30 inches. These three basic sections may be combined for almost any desired length.

Sections are made from 1½ by 9/16 by 3/16-inch open hearth steel channel and will support the heaviest cables. Racks are fastened to the manhole walls by means of a ½ by 4-inch Peirce Expansion Bolt.

Hooks adaptable for insulators and cut from open hearth "T" sections, have a smoothly rounded top surface which will not injure the cable sheath. Hooks are easily attached and lock securely when weight of the cable is placed upon them.

NO. 2125

A. T. & T. Co. Standard

ALSO— HUBEYE NUTS ○ HUBEYE BOLTS ANCHORS, PLATE AND SCREW ○ MANHOLE LADDERS BRACKETS, POLE, CORNER AND HOUSE ○ EYE BOLTS-HUBEYE CARRIAGE BOLTS ○ CROSS ARM BOLTS ○ GUYING ACCESSORIES CABLE SUSPENSION HARDWARE ○ POLE BALCONIES ○ PINS STORM GUY ATTACHMENTS ○ SIDE-WALK GUYS ○ SPAN CLAMPS LAG SCREWS ○ MESSENGER DEAD ENDS ○ CABLE RACKS ○ BRACES DRIVE HOOKS ○ EXTENSION ARMS ○ POLE STRUTS ○ GUY CLAMPS POLE STEPS ○ STUBBING BANDS ○ STRAIN PLATES ○ CABLE SHIELDS GUY PROTECTORS ○ GUY HOOKS ○ MACHINE BOLTS ○ POLE SEATS GRADE CLAMPS ○ GROUND RODS ○ TRANSPOSITION BRACKETS

"HANG THE LOAD ON HUBBARD HARDWARE"

HUBBARD AND COMPANY

ESTABLISHED 1843

PITTSBURGH, CHICAGO — OAKLAND, CALIFORNIA

I. F. KREHBIEL

heavy responsibilities of the position he is going to fill."

Mr. Krehbiel comes from a telephone family. He has had plant, traffic and commercial, as well as practical and supervisory experience with various Independent companies, having started as a boy with his father's company in Kansas. In 1921 he joined the United Telephone Co., Abilene, Kansas. In July of 1927 he joined the staff of the Western Telephone Corp., Salina, Kansas, as commercial and traffic superintendent. During 1933 he conducted a telephone and sales campaign of his own which he left to become district manager with the Nebraska Continental Telephone Co., Columbus, Neb. Mr. Krehbiel has been commercial superintendent of Interstate Telephone Co. since 1939. Immediately prior to that time his activities were concerned with the telephone directory publications of General Telephone Directory Co., an affiliate of the General Telephone System.

Mr. Johnston will continue as president of Interstate Telephone Co. Due to the rapid developments in the area served by the company it becomes necessary to give more and more of his time and attention to matters of policy, dealings with the regulatory bodies and the problems which arise in the various communities served.

T. G. Loomis Wins Chamber of Commerce Trophy

Theodore G. Loomis, advertising executive of the Loomis Advertising Company's St. Louis office, has been awarded the Missouri State Junior Chamber of Commerce trophy for being the outstanding young man in the State of Missouri for the three months of April, May and June.

The award was made by Gilbert

THEODORE G. LOOMIS (left) receiving the Missouri State Junior Chamber of Commerce trophy as the outstanding young man of Missouri from GILBERT MORTON, president of the State organization.

Morton, president of the Missouri State Junior Chamber of Commerce, and was based on Mr. Loomis' achievements as chairman of the Chamber's Americanism Committee. Under his direction this committee completed a highly successful campaign to register the maximum number of voters in St. Louis and also performed outstanding service in assisting the Mayor's Freedom Train Committee.

Reliable Electric Co. Issues New Catalog

The Reliable Electric Co., Chicago, Ill., has issued a series of five catalogs covering the company's complete line of products. Individual catalogs cover Reliable's solderless connectors, straightline splices and deadends, splicing sleeves, cable specialties and telephone protective and terminal equipment. All five catalogs are bound and indexed in a sturdy binder printed in gold and black and are available to those interested upon request to E. Freimuth, Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.

Joseph G. Howland Named to Motorola Advertising Post

Appointment of Joseph G. Howland as advertising and sales promotion manager for Motorola Inc., Chicago radio and television manufacturing firm, was recently announced by Paul V. Galvin, president.

Widely known as an advertising executive for the past 20 years, Mr. Howland recently resigned as director of advertising for the Domestic Appliance Division of Pressed Steel Car Co., Inc., Chicago, manufacturers of

(*Please turn to page* 108)

NO WIRE CUTTING

WITH THE NEW **Hemingray**

TRANSPOSITION INSULATOR

These new Hemingray No. 56 Insulators were designed especially for "point-type" transpositions on standard tandem and four-pin brackets. Retranspositions are made without cutting wires by simply "rolling in" the old lines. Extra-deep grooves eliminate need for tie wires.

RECOMMENDED AND DISTRIBUTED BY

AUTOMATIC ELECTRIC SALES CORPORATION

1033 WEST VAN BUREN STREET, CHICAGO 7, ILLINOIS

ALPHADUCT WIRES FOR All TELEPHONE REQUIREMENTS

LONG LIFE

Neoprene Jacketed
Drop and Bridle Wire

Weatherproof Braided Drop and Bridle
Interior - Tree - Ground - Switchboard -
Pothead - Cable Terminal - Instrument

Manufactured and Tested to Rigid Specifications

ALPHADUCT WIRE & CABLE CO.

Milltown, New Jersey Telephone: Milltown 8-0030

The Clearing House

For the Convenience of readers of Telephone Engineer

Cedar Poles
MAC GILLIS & GIBBS COMPANY
Wells Bldg. Milwaukee 2, Wis.
Northern White and Western Red
Cedar Poles—Plain or Butt-Treated

CYRUS G. HILL
ENGINEERS
ALLEN K. HAMILTON
Plant—Traffic—Commercial
Valuations and Original Cost
231 S. LaSalle St., Chicago 4

RECONDITIONED EQUIPMENT
Kellogg No. 801, Steel Wall Sets, Common Batt., Complete at $8.00 each.
Ringer Boxes, Steel, at $3.50 each.
Stands, Kellogg, W. E., Stromberg, at $5.00 each.
Receivers, Kellogg, complete, at $1.25 each.
Transmitters, Kellogg, Bakelite Fronts, Local Batt., at $1.50 each.
INDEPENDENT TELEPHONE REPAIR CO.
1432 West Fifteenth St. Chicago 8, Ill.

SLOAN, COOK & LOWE
CONSULTING ENGINEERS
Suite 1344 120 South LaSalle Street
CHICAGO
Appraisals—Original Cost Studies
Depreciation, Financial, and Other Investigations

TELEPHONE FUSES REPAIRED
Save 20-50 Per Cent—Prompt Delivery

Cook A9-12	$.08	W.E. 35 Indicator	$.10
Cook A7-46	.07	A.E. Indicator	.08
R.E. Co. 44-52	52.10	W.E. 11C	.10
W.E. 11D-12A	.15	W.E. 7A-7T	.12

We buy fuses good or blown
TELEPHONE REPAIR SERVICE
Box 342 Williamsport, Pennsylvania

Chemical Dehydrators
Automatically controlled, using flake calcium chloride for preventing dampness and condensation in automatic totally enclosed telephone exchanges.
The H. J. Kaufman Co.
13215 Roselawn Ave., Detroit 4, Mich.

JAY G. MITCHELL
Public Utility
Operating and Management
Economics
P.O. Box 523 Evanston, Ill.

THE RATES for this department are as follows: 15c a word, cash with order, please. Box number service if desired. Address all correspondence to: TELEPHONE ENGINEER PUBLISHING CORPORATION, 7720 Sheridan Road, Chicago 26, Illinois.

CLASSIFIED ADS

Help Wanted

HELP WANTED: Need three thoroughly experienced combination men. Not over 32. Growing plant organization. Veterans Training Program. Excellent city, working conditions, wages. Hunting and fishing area. Good future for quiet, sober, industrious and efficient men. Write Box No. 8588 c/o Telephone Engineer.

HELP WANTED: Assistant Traffic Man Wanted. Under age 40. Large Independent company in Ohio. Box No. 8583. c/o Telephone Engineer.

HELP WANTED: Central office maintenance man experience in maintaining relay dial, strowger switch and manual equipment by growing Independent telephone company located in the eastern section of Pennsylvania. Send full details of experience, salary expected, etc. in first letter. Write Box No. 8589, c/o Telephone Engineer.

HELP WANTED: Telephone Manager: $6,000 position open to telephone manager experienced in construction; maintenance; management; supervision of lineman. Our client would be interested in candidate with two years electrical engineering or equivalent, and management of small town telephone system. WESTERN EMPLOYMENT, Sharp Building, Kansas City, Mo.

HELP WANTED: At once, experienced lineman and trouble shooter, willing to work. Magneto exchanges. Steady work, good salary. Central Telephone Co., Clear Lake, South Dakota.

FOR SALE: Small town magneto exchange in south central Kansas with 260 subscribers. Has good toll business and situated in excellent farming community. Write Box 8587 c/o Telephone Engineer.

FOR SALE: 250 Station Exchange in Northwest Missouri, no switched lines, lots of expansion room, 50 stations can be added at once. Rate increase immediately available. Grosses over $6000. Price at 2½ times gross. Terms to reliable purchasers. Address, Telephone P. O. Box 3, Lathrop, Missouri.

FOR SALE: FOUR EXCHANGES near central Missouri. Excellent agricultural community. Sell all or separately. 550 stations. Have orders for phones, also territory that can be developed. Toll increasing. Additional toll lines are soon to be put in service. Cash or Terms. Write E. E. Amick, 403 W. 59th Street, Kansas City, Mo.

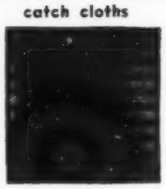
FOR SALE: One 1-inch electric drill, "Thor" model 5523 heavy duty 110 volt 60 cycle A.C., Morris taper chuck. Used very little. . . . One 110 volt A.C. generator 5 k. w. good condition, excellent for standby power supply. Write Americus Telephone Co., Americus, Kansas.

finishing cloths

packed in cartons

CABLE-SPLICERS WIPING CLOTHS

Wipe Perfect Joints
on lead-sheathed cable splices

catch cloths

sealed in wax paper wrappers

GEO. E. WILLIAMS, *Mfg.*
3035 Aldrich Avenue So. Minneapolis 8, Minn.

POSITION WANTED: Young man of 28 desires position of supervisory capacity in an independent telephone company or equipment concern near Chicago. Veteran, married, no children, has ten years experience in all phases of telephone business. An up and coming concern is required, serving a minimum of 5,000 stations. Presently employed as head of an independent plant department. References furnished. Box No. 8582 c/o Telephone Engineer.

BUCKEYE

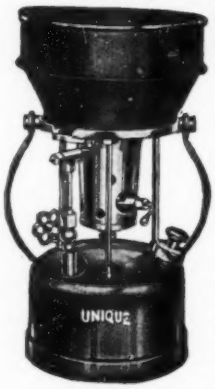
For a Quarter of a Century Rebuilder of the Independents' Telephone Equipment.

FOR RECONDITIONED TELEPHONE AND SWITCHBOARD EQUIPMENT

Depend on

Buckeye Telephone & Supply Co.
COLUMBUS 6, OHIO

A NEW, IMPROVED— UNIQUE SPLICERS FURNACE



Melts 50 Lbs. of Solder in 10 Minutes

Basically the same fine furnace used by larger Utilities for 20 years - Now with

- **FINE FLAME CONTROL**—keeps solder at "just the right temperature."
- **"QUICK CHANGE" GENERATOR**—removed and replaced in 60 seconds.
- **WIND-PROOF** — housing shields generator — No extra shield is needed.

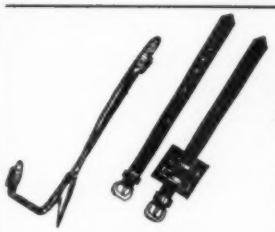
Additional Features: Long-life figure "8" generator—with orifice scraper. Rugged semi-steel top plate. Powerful pump. 18 gauge welded steel tank with bottom shock ring. Size 8" x 13". Weight—15 lbs. Popular size for 6", 7", and 8" pots.

No. 55-I—KEROSENE No. 53-I—GASOLINE
If clear white gasoline is hard to get, order the Kerosene Furnace. You'll like it.

We Invite An Approval Test

UNIQUE MANUFACTURING CO., INC.
221 W. Walton St., Chicago 10, Ill.

LARGEST WAR SURPLUS STORE IN AMERICA!
All Shipments F. O. B. Philadelphia



U. S ARMY SIGNAL CORPS
SPUR SET
Climbers and double straps in set. Size 15½ to 17
3.00

U. S ARMY SIGNAL CORPS
BODY BELT
Sturdy well-made leather body belt with plier pocket.
3.00

U. S ARMY SIGNAL CORPS
SAFETY BELT
Durable leather strap with sturdy clasps.
3.00

Western Electric
Desk Stand Telephone
No. 311W
3.00

Ringer Box
Western Electric Central energy; biased, adj. arm. 1500 ohm coil contains 2½" gongs & 46" induction coils. 21BG cap.
1.50

Western Electric
LOUDSPEAKER SET
100E
Truly fine instrument at an exceptional price.
$25.00

EXTENSION LIGHT
Rubber cord. Note arrows point to built in switch and receptical. Rubber handle, metal guard. Absolutely brand new.
25 ft. cord **2.00**
50 ft. cord **2.90**

8-INCH WIRE CUTTING PLIERS
69c

COMBINATION WIRE & SLEEVE CLAMP
1.95

Hard Work Made Easy!
Brand New U. S. Army "Come-A-Long" TACKLE BLOCK

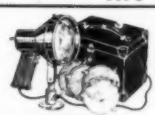
- 2 Snap Hooks
- 2 Double Sheave Pulleys
- 2 Cable Grips
- 25 ft. ⅜ rope

Versatile equipment for use in home, farm, and industries, with many labor-saving uses. For hoisting, pulling and stretching. Packed in original carton.

Sensational low price **2.75**

LINESMEN'S PLIERS
6 inch **1.10**
8 inch **1.75**

LINESMEN'S 8 WAY WRENCH
1.25



PORTABLE 6 VOLT LIGHT
Brand New!
Complete with case, four color lenses, sealed beam lamp, long cord and bracket, toggle and trigger switches. Ideal for campers, boats, farms, trucks, etc., Estimated Govt. cost $35.00
4.95

DELTA 2-WAY LANTERN
Powerful light is two lights in one. Used, in good condition. The Batteries are included.
2.95

GOING FOR A COLD DRINK WITH THESE PORTABLE DRINKING FOUNTAINS
PAYS FOR ITSELF IN A DAY

- TIME SAVING
- ECONOMICAL
- SANITARY
- CONVENIENT

Provides cool refreshing water wherever and whenever needed on the job.

A $25.00 VALUE
Look for These Features
- Pressure Spout
- 4 Gallon Capacity
- Vacuum Insulated
- Built in Air Pump
- 50" High, 7½" Diam.
- Keeps Water Cold for Long Periods

Used—In Excellent Condition

SPECIAL $7.75 EACH
F.O.B. PHILA. PA.

LINESMEN'S CANVAS BUCKET
Heavy, waterproof duck that folds into bottom. Bottom reinforced. Used. Ideal for lifting tools.
8½ inch **95c**
11½ inch **1.45**

U.S. Army Cargo Sling
95c
Multiple uses for this handy tool. 6.4 ft. of sturdy metal wire, and substantial metal ring. For towing, hoisting and lifting.

JOHNSON'S FAIR

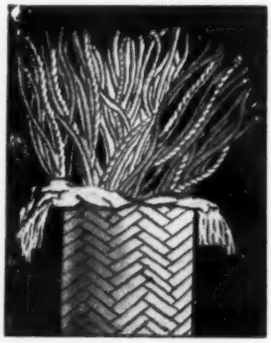
Dept. 706, 8th & Allegheny Ave. **Philadelphia 40, Pa.**

"Looks like every other cable" you'll say!

BUT—

NOW EXAMINE THE WAY ITS FABRICATED

1. Celanese and cotton insulated
2. Wax saturated
3. Waxed paper wrapped
4. Smooth cotton braid
5. Painted with vermin and flame-proof paint



RUNZEL CABLES are oven-baked then wax-saturated to assure absolute moisture-proofing.

True colors and proper waxing aid identification for easy color separation.

For the utmost in clarity of reception use

RUNZEL QUALITY CABLES

Send us your specifications for switchboard and inter-phone cable. Quick delivery.

RUNZEL
Cord and Wire Co.
4723 W. MONTROSE AVE.
CHICAGO 41, ILL.

Presteline electric ranges. He had occupied that position for the last three years.

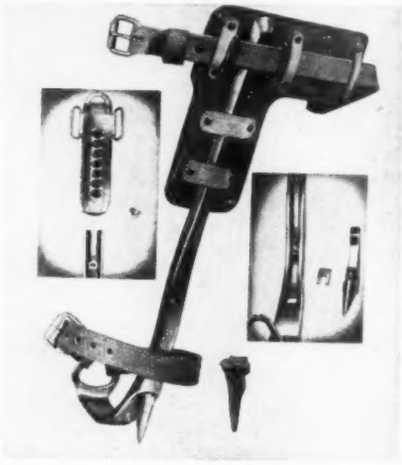
Prior to that Mr. Howland was an account executive for W. W. Garrison & Company, Chicago advertising agency and also was formerly associated with the radio advertising division of the Stewart-Warner Corp., Chicago.

He assumed his new duties September 1. He succeeds Victor A. Irvine, who recently announced his retirement because of his health. Mr. Irvine became seriously ill last fall, since then he has been living in San Jose, Calif. He had served with Motorola for the last 16 years.

Mr. Galvin also announced that Robert J. Flanagan, who was assistant to Mr. Irvine, has been promoted to the position of assistant advertising and promotion manager.

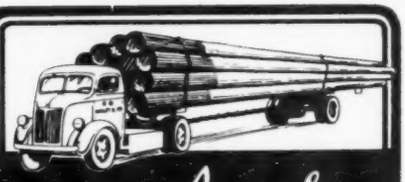
Miller Adjustable Climber Has Five Exclusive Features

After two years of research and development, Miller Equipment Company, Inc., of Franklin, Penn., introduces a new, modern adjustable climber. The manufacturer states the Miller Adjustable Climber marks the "first radical change in climber design in the past 35 years," and offers the following exclusive features: (1) U-channel shank



Miller Adjustable Climber

design providing greater strength with less weight; (2) a removable gaff of improved design making it almost impossible to cut out on a pole (gaff can be replaced on the job by simple operation of special locking key; (3) greater foot surface for wide shoes and winter rubbers, and better arch support; (4) improved eye for attaching climber straps offers more comfort to the wearer and maximum strap wear, and, (5) a new practical screw-fastened adjustable shank allowing size ranges from 14½ to 17½ inches.



Haleys

CEDAR POLES
FIR CROSS ARMS

Quick Truck Shipments from our Ohio yard

●

Also yards at Minneapolis and Haley, Idaho

R. G. HALEY & CO., Inc.
SPITZER BLDG.
TOLEDO 4, OHIO

SINCE 1889
NATCO
CLAY CONDUIT

The proved and standard Protection for Underground Telephone Cables.

Cheapest in the long run. Highest quality and a full line of shapes.

National Fireproofing Corp.
202 E. Ohio Street, N. S.
PITTSBURGH, PA.

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One of our subscribers recently told us:

"We could not have bought the good will that we gained through your advertising and public relations service for $10,000."

And he's right. You can't **buy** good will. But you can **earn** it when you fairly and honestly tell your service story to your customers. Your most important highway to this good will is through a sound advertising and public relations program.

That's what we mean when we say this ad is worth $10,000.

Learn more about it by simply dropping a postcard to the Institute.

Be convinced of the value of advertising . . . we have examples by the dozens!

Be sold on what Telephone Advertising Institute can do for you . . . we have testimonials by the hundreds!

The Institute is now in its fifth year of operation, and has a long list of satisfied subscribers.

Are you on that list? If not, write and find out how we can help you!

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Our experience plus NEW TOOLS and the old "KNOW-HOW" can simplify new construction or rehabilitation of your outside telephone plant.

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A low-priced unit for special installation that results in additional revenue.

Contains a double pole three-way switch with wiring to 4 sets of terminals. Very neat and durable. Ask for special quotation on quantity lots.

SUTTLE EQUIPMENT CO.
LAWRENCEVILLE, ILLINOIS

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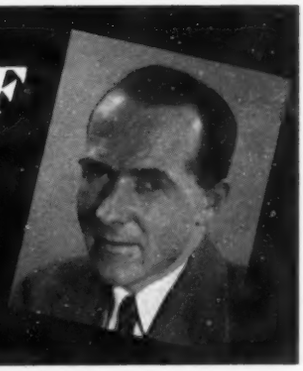
THE BACK OF THE BOOK



By JOHN G. REYNOLDS
Managing Editor

"C" Day In Chicago . . . Chicago's new telephone number system (change from three-letter to two-letter dialing) greeted Chicagoans when they got up September 18.

Apparently as they became more wide awake, they made fewer mistakes. Between 7 and 8 a. m. 90 per cent of the dialed calls were made correctly. Between 8 and 9 a. m. the figure was 91 per cent Between 9 and 10 a. m. the percentage jumped to 94.8 per cent

All this pleased Illinois Bell officials. One thing, of course, that made things easier was the fact that in many cases you can dial the old three letter system and still get the right number.

Anyone who took a chance on hitting the right combination and missed was told about it via a recorded "please dial two letters and figures as shown in your new directory."

It's probably safe to say that the one number dialed wrong most was weather information. The new number is WE 4-1212. You can't do it by dialing the old way. Even a telephone company official got caught on that one—and after he's been working on the change-over for eight months.

• • •

Extension Telephones: Southern Bell recently extended a glad hand to extension telephones and announced telephone employees can now sell extensions to their "hearts' delight." For seven years, Southern Bell officials stated, "selling has become a forgotten art, supplanted by noble efforts to make available telephone facilities go as far as possible, serve as many people as possible as well as possible.

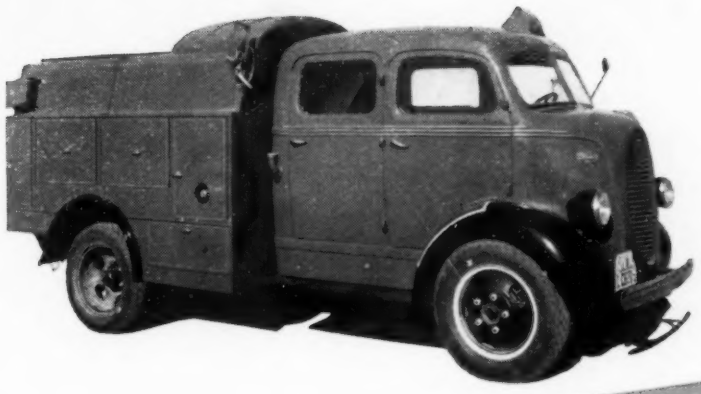
"However, there is one thing that telephone folks can sell now to their hearts' content: this is the Residence extension. It is back again! There are new ones to sell, new ones to serve our friends, our customers, new ones to lighten the harried housewife's burden, to stand guard at the bedside, to provide privacy in a busy household, to comfort the sick, to eliminate innumerable steps and, in general, to extend the valuable services of the telephone throughout the home."

• • •

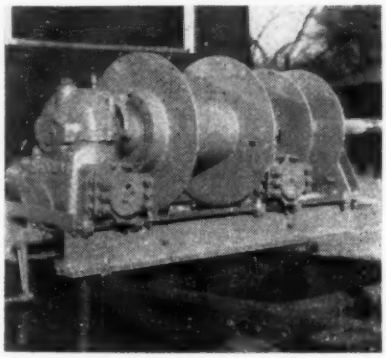
Comfort Plus . . . "Push button paradise" is the term applied by folks in Caro, Mich., to the 18-room home of W. J. Moore, retired head of the Moore Telephone System.

Moore, an inventor with a deep knowledge of electricity, has rigged up his mansion in such a way that life within is simplified by a battery of push buttons and switches operating through a complicated network of wiring he himself designed and installed.

For example, as Mr. Moore mounts the steps he presses a button on the porch railing and the door swings open to admit him just as he reaches the threshold. When he wishes a morning dip he steps on a porch outside his upstairs bedroom, grasps a "flying trapeze with both hands, presses a button with his foot, and the contrivance, attached to an airplane model and operated by electric motor, takes him over the pool on a cable. Other buttons and switches open and shut doors, regulate outdoor lighting and sections of an underground sprinkling system for the lawn. Telephones? Fourteen are scattered around the home. They are installed at the head and foot of the dining room table. A bit of button pressure, and they swing out within reach.



HIGHWAY UTILITY EQUIPMENT



cuts costs, multiplies manpower, stands up under rugged conditions

HIGHWAY MAINTENANCE BODIES

For 1½, 2, 3, and 4-ton trucks. Comfortable crew quarters. Plenty of organized space for all tools and materials. Perfectly balanced for proper weight distribution when loaded.

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Mounts on 1½-ton truck or light tractor. Needs only 6 square feet of platform space. In two minutes it can dig a hole 6″ to 20″ in diameter, 7′ to 10′ deep, at any angle, in clay, hardpan, shale, or frozen ground.

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Easy to load, easy to operate, easy to hook on behind any light truck. Saves time and manpower, simplifies transportation.

HIGHWAY POLE TRAILER

Permits entire load of poles to ride easily, economically behind maintenance truck. No need for special truck and bolster.

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WRITE for information on your special requirements. Highway Utility Equipment Engineers have the experience and the ability to give you the right answer promptly.

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3 NEW FACTORIES

Factory and general offices at Galion, Ohio.

Telephone factory at Mt. Gilead, Ohio

New factory at Upper Sandusky, Ohio to manufacture All-Relay switchboards.

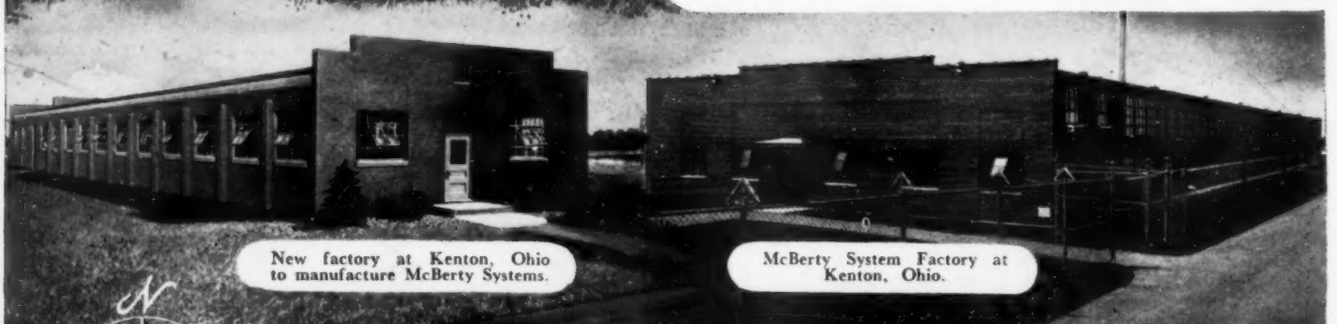
New factory at Mt. Gilead, Ohio to manufacture All-Relay switchboards.

To Meet The Telephone Industry's Increasing Demand for NORTH DIAL EQUIPMENT

These new factories have just been placed in operation, making a total of six manufacturing units to accelerate deliveries on existing orders and to shorten delivery periods on new orders.

Complementary to this increased manufacturing capacity are the services of our two up-to-date laboratories, our outstanding engineering staff, and the comprehensive reservoir of experience upon which we, the oldest manufacturers in our field, can draw in the design of dial equipment.

You can now reorganize your plans for dial conversion in the light of the better deliveries we will shortly be in a position to give you.



New factory at Kenton, Ohio to manufacture McBerty Systems.

McBerty System Factory at Kenton, Ohio.

NORTH

THE NORTH ELECTRIC MANUFACTURING CO. Galion, Ohio, U. S. A.

Originators of ALL-RELAY Systems of Automatic Switching